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STARTLING STORIES

Vol. 19, No. 2

A THRILLING PUBLICATION

May, 1949

A Complete Novel

FLIGHT INTO YESTERDAY

By CHARLES L. HARNESS



*From space to the Moon, from the Moon to the Sun,
Alar the Thief pursues a strange destiny, seeking
the self that he must find to free civilization! 9*

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STARTLING STORIES, Published every other month by Better Publications, Inc., M. L. Pines, President, at 4830 Broadway, New York 18, N. Y. Entered as second-class matter November 22, 1948, at the post office at Chicago, Illinois, under the act of March 3, 1879. Copyright, 1948, by Better Publications, Inc. Subscription (12 issues), \$2.00; single copies, 15¢; foreign and Canadian postage extra. In correspondence with this magazine please include postal zone number, if any. Manuscripts will not be returned unless accompanied by self-addressed, stamped envelopes and are submitted at the author's risk. Names of all characters used in stories and semi-fiction articles are fictitious. If the name of any living person or existing institution is used, it is a coincidence.

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THIS time we're going well-digging—in an effort to see if we cannot discover some glimmering as to the nature of any truth that may lurk there. The cause of our pick-and-shovel expedition is the recent denunciations by the Soviet Academy of Sciences of the resignations of Sir Henry Hellett Dale and Professor Hermann J. Muller of Indiana University from honorary memberships in that august body.

Sir Henry and Professor Muller entered their resignations in protest over the Soviet Academy's refutation of the theories of Mendel, Morgan and Weismann, which have long claimed that acquired characteristics cannot be biologically inherited, in favor of those of the late Dr. Ivan Michurin, who claimed that they could.

We are unfortunately unacquainted with the experiments of Dr. Michurin or their results, but it is not difficult to understand why the supporters of the great Marxian scheme, which insists that man is almost entirely shaped by his economic and physical environments, should find the Mendelian Law utterly unsupportable in its insistence upon hereditary inevitability.

What Is Truth

It is easy for most of us, reared in non-Marxian beliefs, to dismiss the Soviet stand as merely a matter of Socialist State political ideology. To do so, however, is to fail utterly to understand the neo-religious devotion of all true Marxists to the theories of their dialectical prophet. It is their ingrained and sincere belief that anything which weakens the theories so brilliantly propounded by Karl Marx cannot be true, relatively or intrinsically, whether "scientifically proved" or not.

Before we sneer at this preference for Marxian over so-called "absolute" truth, it might be well to remember that, not many

centuries ago, Galileo was persecuted, tried, discredited and very nearly martyred by a court of high Christian prelates for insisting that the Earth moved 'round the sun, thereby disrupting theories of heaven and hell which had been accepted as undeviating truth for a millennium and a half.

So what is absolute truth? It is actuality, no more, no less, and given time it must emerge for all to see. It is there all the time for those who are willing and able to penetrate the obfuscations of prejudice and ideology with which man is forever seeking to surround it in pursuit of his own ends, ignoble or otherwise.

Mendel or Michurin—which is right? Only time will tell. Perhaps one, perhaps the other, perhaps both, perhaps neither. It is, however, pretty close to an absolute truth that science and philosophy attain truth more closely when unimpeded by any sort of ideological dicta.

When Man Conquers Space

Its importance to our immediate future—with the first journeys to alien planets drawing hourly nearer—is virtually self-evident. A lot of neatly-tailored theories are going to be upended when man actually does conquer space. And a lot of ideologies are going to have to backwater or become quickly extinct once such progress is attained.

Two and two must always make four if the component pairs are made up of equal factors or elements. Where all of us slip, especially in the realm of ideas and other intangibles, is our inability or refusal to accept fair measure in our weighing of the factors of this simplest of truisms. We add a little here, subtract a little there and blandly or angrily (according to our natures and motives) insist that the total still is four.

That such false measure can look true within the limitations of our surroundings in

no way means that it is true. The violation of a basic morality of human conduct to attain a desirable end is no more justifiable because that end is desirable than if it seems trivial to the violator. There is no justification for the violation of truth however great the goal—and there is equally no justification in the case of a small end.

This is the great flaw in the reasoning of all apologists. The late General Summerall, when serving as Commandant of the United States Military Academy made this point painfully clear once when he gave a zero to a cadet who had made a very minor error in a complex artillery problem.

"But, sir," the cadet protested upon seeing his grade. "I was only five per cent off."

"Young man," the general told him, "in the field you cannot be one per cent off without running the risk of killing your own men."

Error Means Destruction

Sooner or later error in any theory must result in its destruction. A faulty premise may work for centuries within definite limits. But once those limits are shrunken or enlarged it ceases to apply—and its basic faults at once become woefully apparent. It seems highly probable that the enlargement of man's zone of life to include other planets must do more to wash away falsehood from his ways of existence than anything that has happened since his first emergence from his tribal village to discover the existence of other villages.

Being man, he will then, of course, create a whole new set of falsehoods. But beyond the planets lie the stars—beyond the stars . . . ?

To return to our starting point—in the ancient fable the frog at the bottom of the well remarked in his great wisdom, "I am convinced that the size of the ocean is greatly exaggerated."

By sticking strictly to the limits of his own experience Mr. Frog managed to violate ab-
(Continued on page 142)



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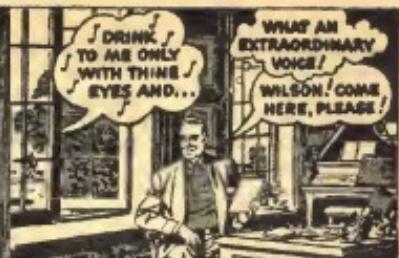
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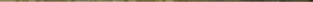
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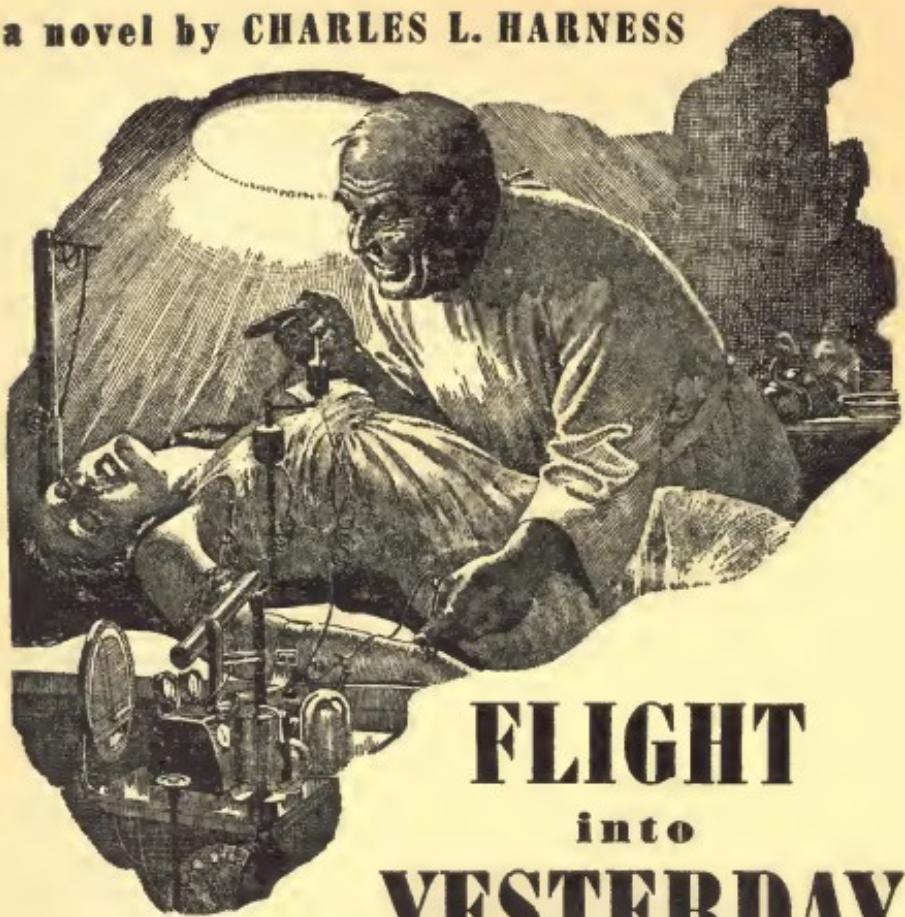
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FLIGHT into YESTERDAY

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HE HAD not the faintest idea who he was, why he was treading the cold black water so desperately or why a great battered shining thing was sliding into the moonlit waves a dozen yards in front of him. A vision of vast distances traversed at

unimaginable velocities flicked across his numbed understanding but was instantly gone again.

His head ached horribly and he had no memory of anything.

Suddenly a blinding shaft of light swept

the waters ahead of him and came to rest on the broken flank of the rapidly sinking wreckage. Along the top of the broken hull he thought he could see a tiny, great-eyed animal whose fur was plastered to its shivering sides.

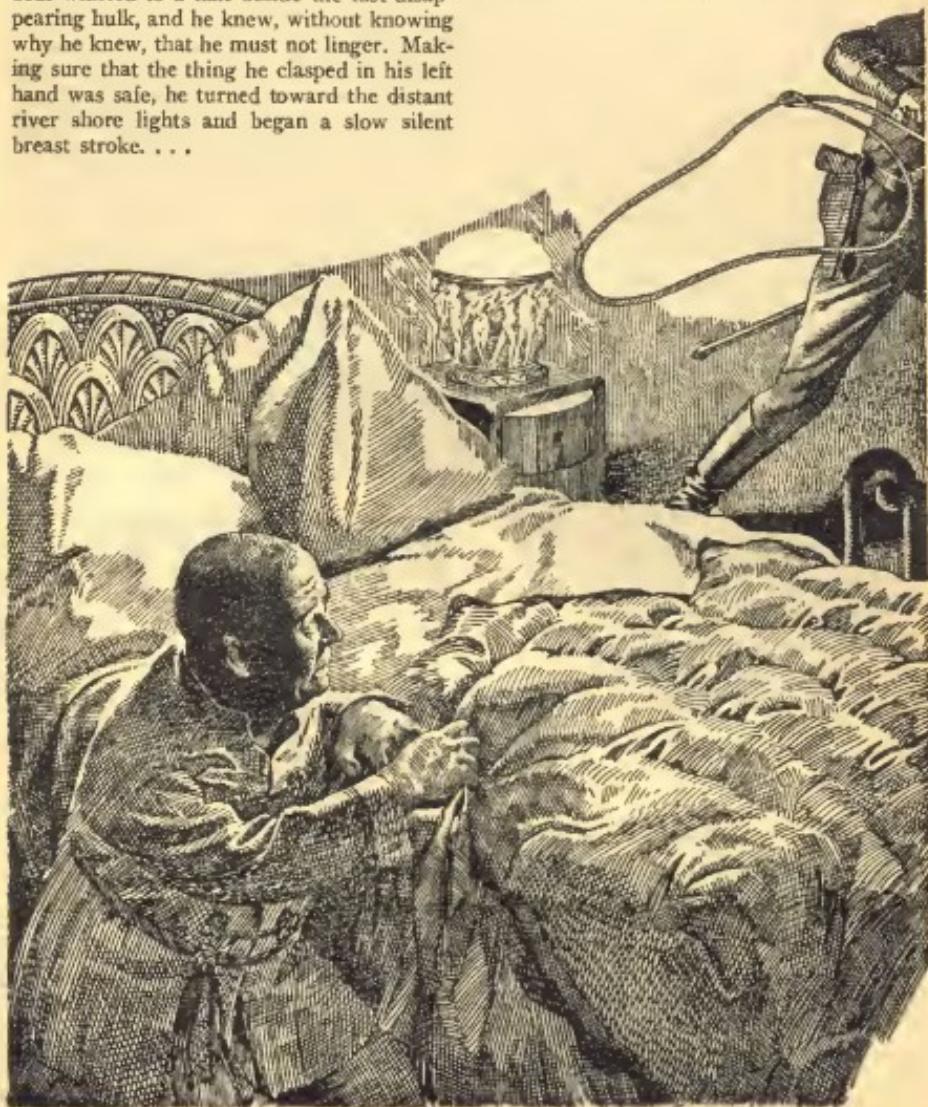
Almost immediately a sleek, brass-trimmed boat whirled to a halt beside the fast-disappearing hulk, and he knew, without knowing why he knew, that he must not linger. Making sure that the thing he clasped in his left hand was safe, he turned toward the distant river shore lights and began a slow silent breast stroke. . . .

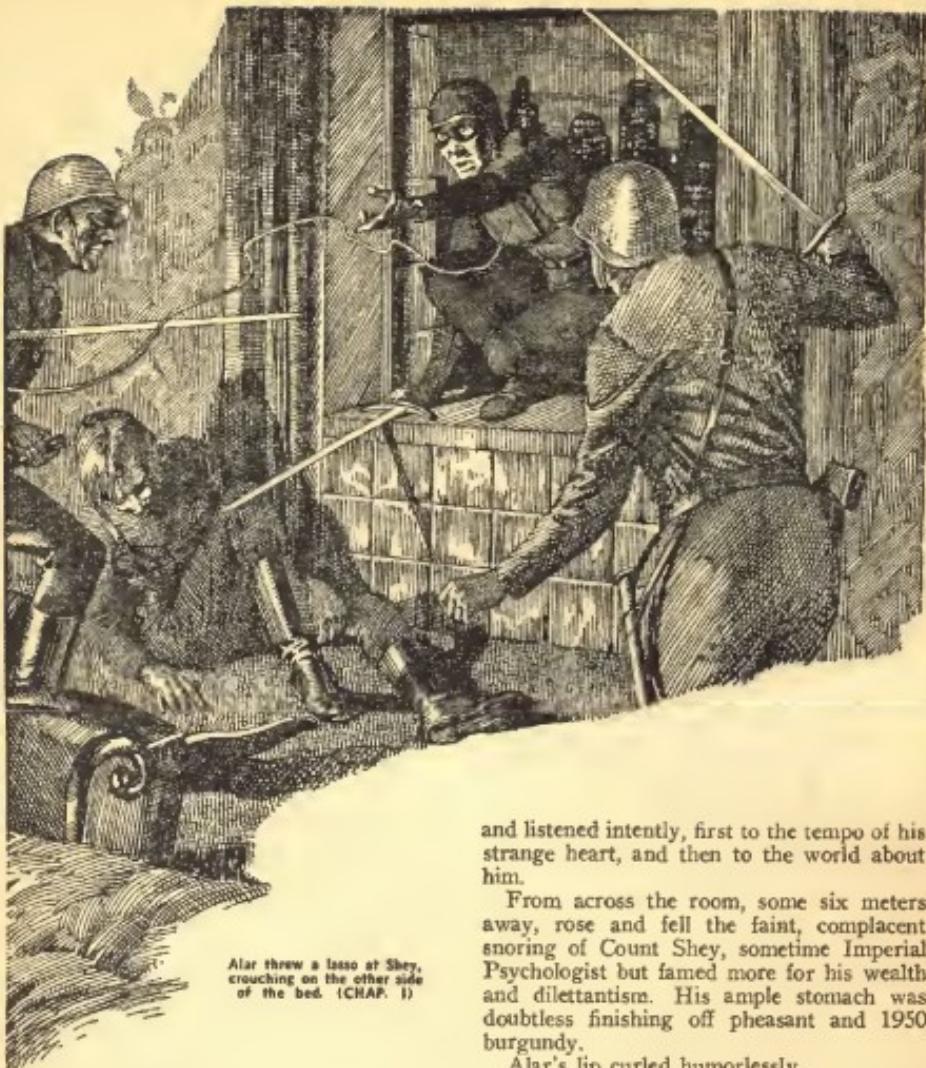
CHAPTER I

Noose for a Psychologist

MASKED eyes peered through the semi-darkness of the room.

Beyond the metal door ahead lay the jewels of the House of Shey—a scintillating pile





Alar threw a lasso at Shey,
crouching on the other side
of the bed. (CHAP. II)

and listened intently, first to the tempo of his strange heart, and then to the world about him.

From across the room, some six meters away, rose and fell the faint, complacent snoring of Count Shey, sometime Imperial Psychologist but famed more for his wealth and dilettantism. His ample stomach was doubtless finishing off pheasant and 1950 burgundy.

Alar's lip curled humorlessly.

Through the doorway behind him he detected the rattle of a card deck and muffled voices—a roomful of Shey's personal guards. Not broken-spirited slave servants, but hard-bitten overpaid soldiers of fortune with lightning rapiers. His hand tightened subconsciously on the hilt of his own saber and his breathing came faster. Even a trained Thief such as he was no match for six of the guards that Shey's fortune could afford. Alar had been living on borrowed time for several

that would buy the freedom of four hundred men. A misstep at this point would bring hell down about him. Yet, in the great city outside, dawn was breaking and he must act quickly. He must tiptoe to the door, hold the tiny voice-box to the center of the great bronze rosette, pillage a fortune and vanish.

The slender black-clad figure leaned against the gold-and-platinum-tapestried wall

years and he was glad this assignment was dry-blade.

He glided with catlike silence to the bronze door, drawing the little cube from his waist-pouch as he did so. With sensitive fingers he found the center of the rosette with its concealed voice-lock. Pressing the cube to the cold metallic cluster, he heard a faint click, then the shrill recorded words, almost inaudible, of Shey, stolen from him, one by one, day by day, over the past weeks.

He replaced the cube in his waist-pouch and waited.

Nothing happened.

FOR A long moment Alar stood motionless. Perspiration began to gather in his armpits and his throat grew dry.

Either the Society had given him an outdated voice key, or there was an additional, unaccounted-for variable.

And it was then that he noticed two things. The first was an ominous quiet in hall and guardroom. The second was that the gentle snores from the bed had ceased. The next moment stretched endlessly toward its breaking point.

His incorrect signal had evidently activated some unseen alarm, warning a dormant hostile world. Even as his mind raced in frantic fury he visualized briefly the hard alert faces of half a thousand Imperial Police, who would be wheeling patrol jets about, then hurtling toward the area.

A faint hesitant scrape of sandals came from the hall. He instantly understood that the guards were puzzled, uncertain as to whether their entry would endanger their master.

He knew that soon one of them would call out.

In a bound he was at the bedroom door that opened to the guard annex, had slammed it noisily behind electronic bolts. He listened momentarily to the angry voices on the other side.

"Bring a beam-cutter!" came a hoarse cry.

The door would be down in short order.

Simultaneously a heavy blow struck him in the left shoulder, and the bedroom sparkled with sudden light. He whirled, crouching, and appraised coolly the man in bed who had shot him.

Shey's voice was a strange mixture of sleepiness, alarm and indignation. "A Thief!" he cried, tossing the gun away. "Lead-throwers are no good against a Thief's

body-screen. And I have no blade here." He licked pudgy lips. "Remember," he giggled nervously, "your Thief code forbids injuring an unarmed man. My purse is on the perfume table."

Both men listened to the blend of distant police sirens and the muffled curses and grunts coming from beyond the bedroom door.

"You will open the jewel room," said Alar flatly.

Shey's eyes widened.

"My jewels!" he gasped. "You shall not have them!"

Three sirens sounded very close. As Alar listened one of them choked off suddenly. I. P.'s would be swarming out of a patrol jet and setting up semi-portable Kades in the street, capable of volatilizing him, armor or no armor.

The bedroom door was beginning to vibrate in resonance with the beam-cutter.

Alar strode almost casually to the bed and stood over Shey's heavy face, which was upturned in trembling pallor. In a startling snakelike movement the Thief seized his host's left eyelid between thumb and forefinger.

SHEY chuckled horribly, then raised his head painfully and reluctantly. He found himself sitting on the edge of his bed, then standing beside it. And when he attempted to grasp the slender throat of his tormenter, a knife seemed to stab into his eyeball.

Sweat was pouring down his face when, a moment later, he stood before his beloved treasure room.

All the sirens had ceased wailing. A hundred or more jets must be waiting for him outside.

And Shey knew it too.

A cunning grin stole over the psychologist's mouth.

"Don't hurt me any more," he giggled. "I'll open the jewel-room."

He put his lips to the rosette and whispered a few words. The door rolled noiselessly into the wall.

He staggered back and rubbed his eye gingerly as the Thief leaped into the treasure alcove.

With methodical speed Alar tore open the teakwood drawers and scooped their glittering contents into his pouch. A less experienced Thief would not have known where or

when to stop but Alar, even in the act of reaching for a beautiful pearl choker worth forty men, jerked back his hand and drew his pouch-thong tight in a single motion.

He was at the portal in a bound, just in time to see the bedroom door crash inward beneath a dazzling mass of rapiers. Even as his own blade whipped from its scabbard and disarmed the foremost guard, he knew intuitively that the odds were too great, that he must be wounded and perhaps killed before he could leap from the mile-high window. This was so because, before he could leap, he must tie his coiled shock-cord to some immovable object. But to what? Shey's bed was no antique. It had no bedposts. Suddenly he knew the answer.

By a miraculous coordination of concentration and skill he had remained unscathed during his retreat to the open window. The guards, unaccustomed to such mass attacks on a single opponent, were thrusting ad lib instead of simultaneously and he was able to parry each thrust as it came. But now, probably by accident, two guards lashed at him from either side. He attempted an intricate level-blade parry for both thrusts, but the angle of approach of the two rapiers was too wide.

However, even as his blade was losing contact with that of the guard on his right, his left hand was drawing a noose of shock cord from the coil-case on his chest, and as the blade seared into his side, he was throwing, left handed, a lasso towards the wet, balding face of Shey, who was crouching on the other side of the bed.

And then the Thief, without waiting to see whether the noose had seized Shey's neck, dived backward out of the window into dark space.

Somewhere in the first hundred feet, while he counted off the quarter seconds, he tore the guard's sword from his side. Luckily, it was just a flesh wound.

The line would gradually grow taut at the fourth second, assuming that the noose had tightened about Shey's neck and that all the guards would be grasping at it with their bare hands for the better part of a minute before one of them should have the presence of mind to sever it with his sword. And by that time Alar would have cut it himself.

He suddenly realized that the whirling, crashing fifth second had come and gone, and that he was now plummeting in free fall.

The noose had not caught.

He noted almost curiously that he was beyond panic or fear. He had often wondered how death would come, and how he would meet it. He would not live to tell his companion Thieves that his reaction to imminent death was simply a highly intensified observation.

That he could see individual grains of quartz, feldspar, and mica in the granite blocks of the wall of the great bulding as it hurtled up and past. And that everything that had happened to him in his second life flashed before him in almost painful clarity. Everything, that is, except the key to his identity.

For Alar did not know who he was.

As the mill of death ground away he relived the moment when the two professors had found him, a young man of about thirty, wandering adaze along a river bank. He relived their searching tests of those far-off days when they were sure he was a spy planted by the Imperial Police. He remembered their astonishment at his voracity for knowledge, recalled in detail the first and last university class he had attended and how he had fallen into a polite doze after the instructor's fourth inaccuracy.

He remembered vividly how the professors, after they had finally become convinced that his amnesia was unfeigned, had bought false indicia of his educational history, whereby overnight he had become a Doctor of Astrophysics on sabbatical leave from the University of Kharkov and a substitute lecturer at the Imperial University, where the two professors taught.

Then came the long walks at night, his arrest and beating by Imperial Police, his growing awareness of the wretchedness about him—and then the time he saw the foul-smelling battered van clatter through the streets in the early morning with its wailing burden of aged slaves.

"Where were they being taken?" he had asked the professors later. "When a slave is too old to work he is sold," was all he could get from them. But he had finally discovered the secret at the cost of two bullets in his shoulder from the charnel-house guard.

FALL nights that he could remember that was the most revelatory. The two professors and a third man, a stranger with a black bag, were waiting for him when he crept blindly into his room in the early morning. He recalled vaguely the painful prob-

ings in his shoulder, the white bandages and finally the momentary nausea that followed the flow of something tingling from his scalp to his toes—Thief armor.

By day he had lectured on astrophysics. By night he had learned the gentle arts of climbing a smooth wall with his fingernails—or running a hundred yards in eight seconds—or disarming three lunging Imperials. In his five years as a member of the Society of Thieves he had looted the wealth of Croesus, and the Society had freed tens of thousands of slaves with it.

Thus had Alar become a Thief, thus was he now fulfilling an unpleasant maxim of the Society of Thieves—No Thief dies a natural death.

Suddenly he felt a blasting blow on his back that tore his black vest off and he realized that the shock cord, now tight as a steel wire, had jerked him back against the building.

His lungs lifted to the bursting point in the first breath he had drawn during the fall.

He would live.

His descent was gradually being broken. The noose must have caught on Shey, after all. He smiled at the struggle that must now be going on far above him—six burly men holding a thread-like cord with their bare hands to keep their source of revenue alive. But within a matter of seconds one of them would think to cut the cord.

He looked below. He had not fallen as far as he had thought. It was now evident that he had counted the quarter seconds far too rapidly. Why did time linger so in the presence of death?

Now the dim-lit street was rushing up to meet him. Tiny lights scurried around below, probably I.P. armored cars with short-range semi-portable Kades as well as shell-throwers. He was certain that half a dozen infrared beams were bathing this side of the building, and knew that it was just a question of time before he was spotted. He doubted that the I.P.'s could score a direct shell hit on his body but the shock cord was highly vulnerable. A flying metal fragment could easily sever it.

The lights below were now forbiddingly large. Alar lifted his hand to the cord case, ready to engage the decelerator. About one hundred feet above ground he jammed home the gear lever and almost blacked out under the abrupt deceleration. And then he was stumbling dizzily to his feet, cutting the

cord and starting up a street barely alight with the fast-coming dawn.

Which way to run? Would police cars with Kades guns be waiting for him when he turned the corner? Were all the streets blocked?

The next few seconds would have to be played very accurately.

A shaft of light stabbed at him from the left, followed by the stamp of running feet. He whirled in alarm to see a glittering sedan chair carried on the shoulders of eight stalwart slaves, whose sweating faces reflected the growing redness in the east. A woman's slurred voice floated to him and then the chair was past.

Despite his growing peril he almost laughed. Now that nuclear-powered jet cars were available to all, the carousing nobility could distinguish themselves from the carousing bourgeois only by a return to the sedan chair of the Middle Ages. The padding feet died away.

Then, the shock of what she had said hit him. "The corner to your left, Thief."

THE SOCIETY must have sent her. But he really had no choice. He swallowed hard and ran around the corner—and stopped.

Three Kades guns immediately swiveled in three I.P. cars to cover him. He threw up his hands and walked slowly towards the car on the left.

"Don't shoot!" he cried. "I surrender!"

He gulped with relief as Dr. Haven dismounted from the impostor car, rapier drawn, and pretended to advance cautiously to meet him. A pair of handcuffs was gripped in one hand.

"The reward goes three ways!" called an I.P. from the middle car.

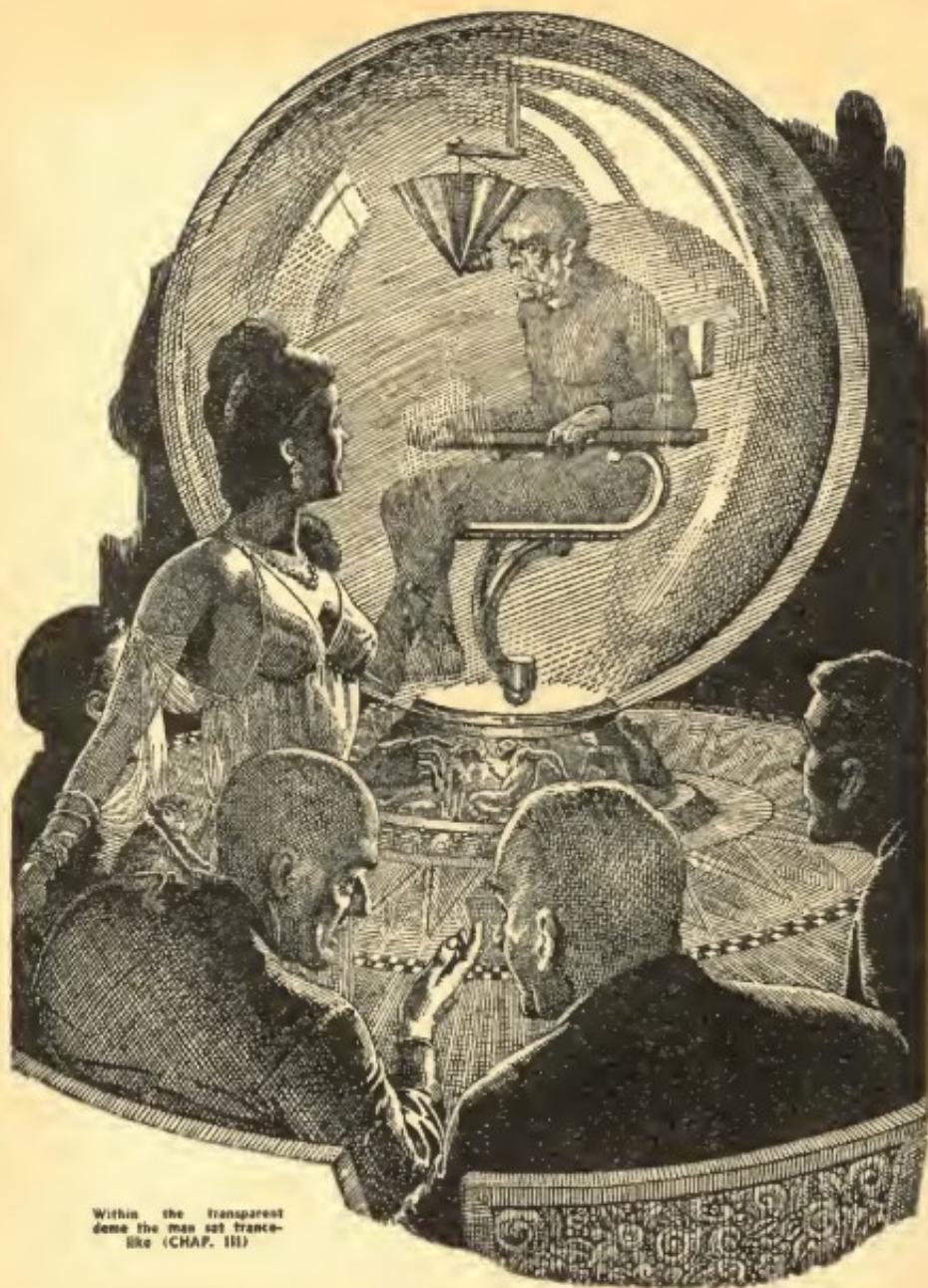
Dr. Haven did not turn but held up a hand in acknowledgment.

"Easy, boy," he whispered to Alar. "Thank the gods you came this way. Lost a bit of blood? Surgeon in the car. Can you make it to your lecture?"

"I think so but in case I pass out the jewels are in my pouch."

"Beautiful. That gives us four hundred freemen." He seized Alar by the belt roughly. "Come on, you scum! You've got a lot of questions to answer before you die!"

A few minutes later the Thief car lost its escorts, changed its insignia and sped toward the University.



Within the transparent dome the man sat trance-like (CHAP. III)

CHAPTER II

The Lady and The Tarsier

“YOU might be interested to learn that Shey offered me two billion for you yesterday.” Haze-Gaunt seemed to be toying idly with the emerald tassels on the vanity lamp that illuminated the woman's face, but she knew his every sense was strained to catch her faintest reaction.

A few years ago she might have shuddered. But now . . . She continued to brush her black hair with long even strokes and her quiet black eyes sought out his face in the vanity mirror.

The face of the Chancellor of America Imperial was like no other face on earth. The skull was smooth-shaven but the incipient hairline revealed a broad high forehead beneath which were sunk hard intelligent eyes. The aquiline nose showed a slight irregularity, as though it had once been broken and reset.

The man's cheeks were broad but the flesh was tight-fitting, lean and scarless except for one barely visible cicatrix across the jutting chin. She knew his dueling philosophy. Enemies should be disposed of cleanly and without unnecessary risk by specialists in the art. He was courageous but not naive.

The mouth, she decided, might have been described in another man as firm but, in contrast to its surrounding features, it seemed vaguely petulant. It betrayed the man who had everything—and nothing.

But perhaps the most remarkable thing about him was the tiny huge-eyed ape-thing that crouched in eternal fright on the man's shoulder and which seemed to understand everything that was said.

Unsmiling, Haze-Gaunt asked, “You aren't interested?” He lifted his hand in an unconscious gesture and stroked his shrinking little pet.

He never smiled. Only a few times had she known him to frown. An iron discipline defended his face from what he seemed to regard as puerile emotional vanities. And yet he could never hide his feelings from her.

“Naturally, Bern, I'm interested. Have you entered a binding agreement for my disposal?”

If he was rebuffed he gave no sign of it

beyond an imperceptible hardening of his jaw muscles. But she knew he would have liked to rip the jeweled tassel from its engraved foundation and hurl it across the boudoir.

She continued to brush her hair in unperturbed silence, her expressionless eyes looking calmly at his mirrored ones.

He said, “I understand that you called to a man on the street early this morning when the chair slaves were bringing you in.”

“Did I? I don't remember. Perhaps I was drunk.”

“Some day,” he murmured, “I really shall sell you to Shey. He loves to experiment. I wonder what he would do to you?”

“If you want to sell me, then sell me.”

His mouth barely curled. “Not yet. Not yet. All things in due time.”

“Just as you say, Bern.”

She thought, “Your bitter hate of my husband and envy of his achievements has led you to destroy him and to enslave the woman he loved. You think that I cannot escape, that I remain with you because I must. How little you know, Haze-Gaunt!”

The televiszor buzzed. Haze-Gaunt bent over, pressed the “incoming” button and was welcomed immediately by a nervous giggle. The screen remained blank.

It was Shey. He explained that he had just had an unfortunate encounter with a Thief during the night and would be delayed while his personal physician administered to his throat. But he wanted the chancellor to be sure to meet him a little later in the Room of the Microfilm Mind.

“Very well,” agreed Haze-Gaunt and turned off the vizor.

“Thieves,” mused Keiris. “The Society of Thieves is about the only moral force in America Imperial. How strange! We destroy our churches and feast our souls on robbers!”

“Their victims rarely report a spiritual awakening,” returned Haze-Gaunt dryly. “No matter how the Society uses its loot, remember, it is still made up of common thieves. Simple police cases.”

“Simple police cases! Just yesterday the Minister of Subversive Activities made a public statement to the effect that if they weren't obliterated within another decade the Thieves would destroy the present ‘beneficial’ balance between freeman and slave.”

“He's perfectly right.”

“Perhaps not. But tell me this: Did my

husband really found the Society of Thieves?"

THE man was silent for a long time. For a fleeting moment his face, though completely immobile, seemed transformed into something hideous. He said finally, "That's quite a story. Most of it you know as well as I."

"Perhaps I know less about it than you think. I know that you and he were bitter enemies as students at the Imperial University, that you thought he deliberately tried to excel you and defeat you in campus competitions. After graduation everyone seemed to think his researches were a shade more brilliant than yours. Somewhere along there you challenged him to a duel, didn't you? And then you disappeared for a few months."

"I fired first—and missed," said Haze-Gaunt shortly. "Muir, with his characteristic insufferable magnanimity, fired into the air. The I.P.'s were watching and we were arrested. Muir was released on probation. I was condemned and sold to a great orchard combine.

"An underground hydroponic orchard, my dear Keiris, is not the country idyll of the nineteenth century. I didn't see the sun for nearly a year. With thousands of tons of apples growing around me I was fed garbage a rat wouldn't touch. The few of my companion slaves who tried to steal fruit were detected and lashed to death. I was careful. My hatred sustained me. I could wait."

"Wait? For what?"

"Escape. We took turns, laid the plans carefully and were frequently successful. But, on the day before my turn was due, I was bought—and freed."

"How fortunate. By whom?"

"By 'a party unknown' the certificate said. But it could only have been Muir. He had been scheming, borrowing, and saving for months to fling this final gesture of contemptuous pity in my face."

The little ape-creature sensed the icy savageness in the man's voice and ran fearfully down his jacket sleeve to the back of his hand. Haze-Gaunt stroked his pet with a curled index finger.

The only sound in the room was the soft luxurious meeting of brush and black hair as Keiris continued her silent task. She marveled at the insane bitterness evoked by a simple act of humanity.

Haze-Gaunt stated, "It was not to be borne. I then decided to devote the remainder of my life to the destruction of Kennicot Muir. I could have hired an assassin but I wanted to kill him myself. In the meantime I entered politics and I advanced quickly. I knew how to use people. My year underground taught me that fear gets results."

"But even in my new career I could not escape Muir. The day I was appointed Secretary of War Muir landed on the moon. A few years later, on the eve of the elections that were to make me chancellor of America Imperial, Muir returned from his trip to the sun,

"He had found a way to beat the tremendous solar gravity by the continuous synthesis of solar matter into a remarkable fission fuel via an anti-grav mechanism. Again he was the toast of imperial society and my greatest political triumph was ignored.

"But my patience was finally rewarded. It was almost exactly ten years ago. Muir finally had the temerity to differ with me on a strictly political matter and I knew then that I must kill him quickly or be eclipsed by him forever."

"I didn't know Kim ever went in for politics," murmured Keiris. "What was the argument?"

"Just this: After establishing the solar stations Muir insisted that the muirium they produced be used to regenerate the general world standard of living and to free the slaves, whereas I, Chancellor of America Imperial, maintained that the material was needed for the defense of the Imperium. I ordered him to return to Earth and to report to me at the chancellery. We were alone in my inner office."

"Kim was unarmed, of course?"

"Of course. And when I told him that he was an enemy of the state and that it was my duty to shoot him he laughed."

"And so you shot him."

"Through the heart. He fell. I left the room to order his body removed. When I returned with a house slave he—or his corpse—had vanished. Had a confederate carried him away? Had I really killed him? Who knows? Anyway the thefts began the next day."

"He was the first Thief?"

"We don't really know, of course. All we know is that all Thieves seemed invulnerable to police bullets. Was Muir wearing the

same type of protective screen when I shot him? I don't suppose I'll ever know."

"Just what is the screen? Kim never discussed it with me."

"There again we don't know. The few Thieves we've taken alive don't know, either. Under Shey's persuasion they indicated that it was a velocity-response field based electrically on their individual encephalographic patterns, and was maintained by their cerebral waves. What it really does is spread the bullet impact over a wide area. It converts the momentum of the bullet into the identical momentum of a pillow."

"But the police have actually killed screen-protected Thieves, haven't they?"

"True. We have semi-portable Kades rifles that fire short-range heat beams. And then, of course, plain artillery with atomic explosive shells the screen remains intact but the Thief dies rather quickly of internal injuries. But you're fully acquainted with the main remedy."

"The sword."

"Precisely. Since the screen resistance is proportional to the velocity of the missile it offers no protection against the comparatively slow-moving things, such as the rapier, the hurled knife or even a club. And all this talk of rapiers reminds me that I have business with the Minister of Police before meeting Shey. You will come with me and we'll watch Thurmond at rapier practice for a few minutes."

"I didn't know your vaunted Minister of Police required practise. Isn't he the best blade in the Imperium?"

"The very best. And practice will keep him that way."

"Just one more question, Bern. As an ex-slave I should think you'd favor the abolition of slavery rather than its extension."

He replied sardonically, "Those who struggle mightily against enslavement can best savor their success by enslaving others. Read your American colonial history."

the fencing rooms. At the threshold of the chamber the slave bowed again and left them. Haze-Gaunt indicated chairs and they seated themselves unobtrusively.

Thurmond noted their arrival from the center of the gym, nodded briefly and immediately resumed a quiet conversation with his fencing opponent.

Keiris ran her eyes in grudging admiration over the Police Minister's steel-chiseled face and gorgeously muscled torso, clad lightly in a silken jacket and flowing trunks. A metallic indomitable voice floated to her.

"Do you understand the terms?"

The opponent replied thickly, "Yes, excellency." His face was covered with perspiration, and his eyes were wide and glazed.

"Remember then that if you are still alive after sixty seconds you will have your freedom. I paid nearly forty thousand unitas for you and I expect a good return for my money. Do your best."

"I shall, excellency."

"*En garde!*"

Thrust, parry, feint, thrust, parry . . . The tempo increased rapidly.

Thurmond's blade had the enchanting delicacy of an instrument that was part of its wielder. The man was incredibly light on his feet, balancing effortlessly on tiptoe—an extraordinary stance in a fencer—while his bronzed body rippled and flashed, itself a rapier, in the soft light of the chamber. His eyes were heavy-lidded, his face an expressionless mask. If he was breathing Keiris could not detect it.

She transferred her study to the slave fencer and noted that the man had cast aside his despair and was defending himself with savage precision. So far his new owner had not scratched him. Perhaps in free life he really had been a dangerous duelist. Then a tiny trickle of red appeared magically on his left chest. And then one on his right chest.

Keiris held her breath and tensed her fists. Thurmond was touching each of the six sections into which a fencer's body is arbitrarily divided—a demonstration that he could kill the other at will.

The doomed man's jaw dropped, and his efforts passed from science to frenzy. When the sixth cut appeared on his lower left abdomen he screamed and sprang bodily at his tormentor.

He was dead before his disarmed blade clattered to the floor.

CHAPTER III

The Mind

AN OBSEQUIOUS house-slave in the red-and-gray livery of the Police Minister led them down the arched corridor to

A gong sounded, indicating that the minute was up.

Haze-Gaunt, erstwhile pensive and silent, now arose and clapped his hands twice. "Bravo, Thurmond. Nice thrust. If you're free I'd like you to accompany me."

Thurmond handed his reddened blade to a house-slave and bowed over the corpse.

WITHIN the transparent plastic dome the man sat trance-like. His face was partly obscured from Keiris' view by a cone-shaped metal thing that hung from the globe's ceiling and that was fitted at its lower extremity with two viewing lenses. The man was staring fixedly into the lenses.

His head was large, even for the large body that bore it. His face was a repulsive mass of red scar tissue, devoid of definable features. His hairless hands were similarly scarred and malformed.

Keiris shifted uneasily in her seat in the semicircle of spectators. On her left was Thurmond, silent, imperturbable. On her right Haze-Gaunt sat immobile in his chair, arms crossed over his chest. It was clear that he was growing impatient. Beyond him was Shey and beyond Shey was a man she recognized as Gaines, Undersecretary for Space.

Haze-Gaunt inclined his head slightly toward Shey. "How long will this go on?" His furry pet chattered nervously, ran down his sleeve, then back to his shoulder again.

Shey, his face wreathed in perpetual smiles, raised a pudgy hand in warning. "Patience, Bern. We must await the end of the present microfilm runs."

"Why?" asked Thurmond with mixed curiosity and indifference.

The psychologist smiled benignly. "At present the Microfilm Mind is in a deep autohypnosis. To expose him to unusual exterior stimuli would rupture some of his subconscious neural networks and his usefulness to the government as an integrator of disconnected facts would be seriously impaired."

"Extraordinary," said Thurmond distantly.

"It is extraordinary," rejoined the rotund psychologist with amiable eagerness. "It cannot be seen from here, of course, but each of the Mind's eyes is observing a different microfilm strip and each strip passes through the viewer at a speed of forty frames a second.

"One-fortieth of a second is the approximate reversal rate of the visual purple of

the retina and this represents the upper limit at which the Microfilm Mind can operate. His actual thought processes, of course, are much faster."

"I begin to see," murmured Haze-Gaunt, "how the Mind can read an encyclopedia in an hour but I still don't understand why he must work under auto-hypnosis."

Shey beamed. "One of the main traits of the human mind that distinguishes it from, for example, that of your pet is its ability to ignore trivia. When the average man sets about solving a problem he automatically excludes all that his conscious mind considers irrelevant.

"But is the rejected matter really irrelevant? Long experience tells us we can't trust our conscious mind in its rejections. That's why we say, 'Let me sleep on it.' That gives the subconscious mind an opportunity to force something to the attention of the conscious mind."

"What you're saying," said Haze-Gaunt, "is simply that the Microfilm Mind is effective because he functions on a subconscious level and uses the sum total of human knowledge on every problem given him."

"Exactly!" cried the psychologist with pleasure. "How clever you are, Bern!"

"I believe the viewer is being retracted," observed Thurmond.

They waited expectantly as the man within the globe slowly sat erect and stared at them, still half-unseeing.

"Do you notice his face and hands?" burbled the psychologist. "He was burned badly in a night-club fire. He used to be a mere entertainer before I discovered him. Now he's the most useful instrument in my whole collection of slaves. But look, Bern, he's going to discuss something with Gaines. Listen and judge for yourself whether you want to ask him some questions."

A transparent panel rolled aside in the dome. The Mind addressed Gaines, a tall, cavern-cheeked man.

"Yesterday," said the Mind, "you asked whether the Muir drive could be adapted for use in the T-twenty-two. I think it could. The conventional Muir drive depends upon the fission of muirium into americium and curium, with an energy output of four billion ergs per microgram of muirium per second."

"However, when Muir synthesized muirium from americium and curium in his first trip to the sun, he failed to realize that the element could also be synthesized from pro-

tons and energy quanta at a temperature of eighty million degrees. And the reverse is true.

"If the muirium nucleus is disrupted at eighty million degrees, the energy developed would be over forty quintillion ergs per microgram, which would be power enough to accelerate the T-twenty-two very quickly to a velocity beyond the speed of light, except for the theoretical limiting velocity of the speed of light."

GAINES looked dubious. "That's too much acceleration for a human cargo. Ten or eleven G's is the limit, even with a pressure-packed abdomen."

"It's an interesting question," admitted the Mind. "Like slow freezing, a few G's could be expected to rupture and destroy cell life. On the other hand, a few million G's administered *ab initio* with no transition from low to high acceleration, might be comparable to quick freezing in its preservation of body cells.

"However, the analogy ends there, for while freezing inhibits cell change, gravity stimulates it. Observe the effect of only one G on a plant. It causes certain of the plant cells slowly to accumulate skywards to constitute a stalk, and certain others slowly to accumulate earthward to form the rhizome structure.

"Several million G's would undoubtedly cause drastic but unpredictable micro- and macropathologic geotropic transformations. I can only suggest that you try various biota as passengers in the T-twenty-two before human beings make the trip."

"You're probably right. I'll install a Muir drive with the proper converting system at eighty million degrees."

The conversation ended perfunctorily. Gaines bowed to the group and left.

Shey turned a delighted face up to Haze-Gaunt. "Remarkable chap, this Mind, isn't he?"

"Really? I could do as well myself by mixing some old newspaper reports with a little pseudoscience and mumbojumbo. What can he do with something only *I* know about?" He caressed the little animal on his shoulder. "My pet here for example?"

The Mind was not addressed directly. Yet he replied immediately in his factual monotone:

"His excellency's pet appears to be a spectral tarsier."

"*Appears?* You are already lost in speculation."

"Yes, he appears to be a *tarsius spectrum*. He has the great eyes, large sensitive ears and elongated bone that help the tarsius in detecting insects at night and in jumping to catch them on the wing. He has the small platyrhine nose too."

"Structurally he appears, like the spectral tarsier, higher in the evolutionary tree than the tree shrews and lemurs, lower than the monkeys, apes, and man. But appearances are deceptive. *Tarsius* is at most an arboreal quadruped. Your pet can brachiate, the same as the primates. His thumbs are opposable and he can walk erect on his hind legs for short distances."

"All that would be obvious to a keen observer," said Haze-Gaunt. "I suppose you'd say he's a mutated lemur evolving toward the primates?"

"I would not."

"No? But surely of terrestrial stock?"

"Very likely."

The chancellor relaxed and tweaked his pet's ears idly. "Then you can learn something from me." His voice was ominously cold. "This creature was recovered from the wreckage of a ship that almost certainly came from outer space. He is the living proof of an evolving biota remarkably parallel to our own." He turned languidly to Shey. "You see? He can do nothing for me. He's a fraud. You ought to have him destroyed."

"I know about the wreckage referred to," interjected the Mind quietly. "Despite its interstellar drive, as yet unknown on earth—with the possible exception of the mechanism I just explained to Gaines for the T-twenty-two—there is other evidence that points to the terrestrial origin of the ship."

"What evidence?" asked Haze-Gaunt.

"Your pet. Instead of being a tarsioid reaching toward primatehood he is more likely of human stock that has degenerated into a tarsioid line."

Haze-Gaunt said nothing. He stroked the little animal's sleek head, which peeped fearfully over his shoulder toward the Mind.

"What is the Mind talking about?" whispered Shey.

Haze-Gaunt ignored him and looked down at the Mind again. "You realize I cannot permit such inference to go unchallenged." The edge on his voice was growing sharper.

"Consider the whale and porpoise," said the Mind unhurriedly. "They seem to be as

well as or better adapted to the sea than the shark. And yet we know they are not fishes but mammals, because they are warm-blooded and breath air. From such evolutionary residua we know that their ancestors conquered dry land and later returned to the water. And it's the same with your pet. His ancestors were once human, perhaps even higher, and dwelled the earth—*because he can speak English!*"

Haze-Gaunt's lips were pressed together in a thin white line. The Mind continued relentlessly. "He talks only when the two of you are alone. Then he begs you not to go away. That's all he ever says."

Haze-Gaunt addressed Keiris without turning his head. "Have you eavesdropped?"

"No," she lied.

"Perhaps you do have some extraordinary power of factual synthesis," Haze-Gaunt said to the Mind. "Suppose, then, you tell me why the little beast keeps begging me not to 'go away' when I have no intention of leaving the Imperium?"

"He can foresee the future to that extent," stated the Mind tonelessly.

HAZE-GAUNT gave no sign of either believing or disbelieving. He rubbed his lower lip with his thumb and regarded the Mind thoughtfully.

"I am not ignoring the possibility that you may be a fraud. Still, there is a question that has been troubling me for some time. On the answer to this question my future—even my life—may depend. Can you tell me both the question and its answer?"

"Oh, come now, Bern," interrupted Shey. "After all—"

He was interrupted in turn. "The Imperial American government," intoned the Mind, "would like to launch a surprise attack on the Eastern Federation within six weeks. The chancellor wishes to know whether factors unknown to him will require the postponement of the attack."

Haze-Gaunt was leaning forward in his chair, body tense. Shey was not smiling.

"That's the question," admitted the chancellor. "What is the answer?"

"Factors that may require postponement of the attack do in fact exist."

"Indeed? What are they?"

"One of them I do not know. The answer depends on data presently unavailable."

"I'll get the data," said Haze-Gaunt with

growing interest. "What's necessary?"

"A competent analysis of a certain section of star chart. Four years ago the Lunar Station began sending me microfilm plates of both celestial hemispheres by the square second. One of these plates is of particular interest, and I feel that what it shows may have a bearing on the future of civilization. It should be analyzed immediately."

"What sort of bearing?" demanded Haze-Gaunt.

"I don't know."

"Eh? Why not?"

"His conscious mind can't fathom his subconscious," explained Shey, fingering his rich robes. "All his conscious mind can do is bring to light the impressions of his subconscious mind."

"Very well. I'll put the lunar staff to work on it."

"A routine examination will prove worthless," warned the Mind. "I could recommend only two or three astrophysicists in the system capable of the necessary analysis."

"Name one."

"Ames has recently been attached to the staff of Undersecretary Gaines. Perhaps Gaines could be persuaded to lend—"

"He'll do it," said Haze-Gaunt succinctly. "Now, you mentioned 'factors'—in the plural, I presume the star plate isn't the only one."

"There is another factor of uncertainty," said the Mind. "It involves the personal safety of the chancellor as well as of the ministers and consequently bears on the question of postponing the attack."

Haze-Gaunt looked sharply at the man in the globe. The Mind returned the stare with emerald-basilisk eyes. The chancellor coughed. "This other factor—"

The Mind resumed placidly, "The most powerful creature—I hesitated to call him a man—on earth today is neither Lord Chancellor Haze-Gaunt nor the Dictator of the Eastern Federation."

"Don't tell us it's Kennicot Muir," said Haze-Gaunt sardonically.

"The creature I have in mind is a professor at the Imperial University named Alar—possibly so named because of his winged mind. He is very likely a Thief but that's of minor consequence."

At the word "Thief" Thurmond looked interested. "Why is he dangerous? Thieves are limited to defense by their code."

"Alar seems to be a mutant with potential-

ly great physical and mental powers. If he ever discovers he has these powers, considering his present political viewpoint, no human being on earth would be safe from him, code or no code."

"Just what are his potentialities?" queried Shey. "Is he a hypnotist? A telekineticist?"

"I don't know," admitted the Mind. "I can only offer my opinion that he is dangerous. *Why* is another matter."

Haze-Gaunt appeared lost in thought. Finally, without looking up, he said, "Thurmond, will you and Shey be in my office in one hour. Bring Eldridge of the War Office with you. Keiris, you will return to your rooms in the company of your body guard. It will take you all evening to dress for the Imperatrix' ball tonight."

A few minutes later the four left the room. Keiris, taking a last look backward, met the enigmatic, unblinking eyes of the Microfilm Mind and was troubled. He had been telling her at various intervals during the interview, by the code they had worked out long before, that she must be prepared to receive a Thief in her rooms tonight and protect him from his pursuers.

And Haze-Gaunt would be expecting her at the masked ball simultaneously.

CHAPTER IV

The Raid

FROM his seat at the grand piano Alar peered over the music sheets toward his two friends, Micah Corrips, Professor of Ethnology, and John Haven, Professor of Biology, who were huddled in complete absorption over their voluminous manuscript.

Alar's oversized dark eyes glanced at the two savants briefly, then his gaze went past them, by the disordered stacks of books and papers, beyond the mounted row of human and semi-human skeletons, past the urn of coffee gradually boiling dry near the street window and out over the university campus, where a large black truck was pulling up quietly behind a hedge of Grecian junipers. It simply stopped. Nobody got out.

His pulse was climbing slowly. He sounded a certain chord on the piano keyboard. Two men heard him, he knew, but did not seem alarmed.

"Now, Micah, read what you have there," said Haven to the ethnologist.

Corrips, a large vigorous man with friendly blue eyes and a classroom manner so seductive that the great university auditorium had been assigned to him as a lecture room, picked up the preface and began to read.

"We may imagine, if we like, that early one afternoon in the year forty thousand B.C. the advance group of Neanderthals reached the Rhone Valley, about where Lyon now stands. These men and women, driven southwest from their hunting grounds in Bohemia by slowly encroaching glaciers, had lost nearly a third of their number since crossing the frozen Rhine the previous January. There were no longer any children or very aged people in the group.

"These men from eastern Europe were not handsome. They were squat, massive, almost neckless, with beetling brow ridges and flattened nostrils. They walked with bent knees, on the outer edges of their feet, as do the higher anthropoids."

"Even so, they were tremendously more civilized than the brutish Eoanthropus (Piltdown man? Heidelberg man?) into whose territory they were marching. Eoanthropus' sole tool was a crude piece of flint, chipped and shaped to fit his hand, which he used to grub at roots and occasionally to strike at reindeer from ambush.

"He passed his short dim-witted life in the open. Neanderthal, on the contrary, made flint spearheads, knives and saws. For these he used large flint-flakes rather than the core of the flint. He lived in caves and cooked over a fire. He must have had some idea of a spirit world and a life in the hereafter, for he buried his dead with weapons and artifacts. The group leader—"

"Excuse me, gentlemen," Alar broke in quietly. "I register one fifty-five." His fingers continued to ripple through the second movement of the Pathetique. He had not taken his eyes from the music sheets since he had first looked across the room and through the window in response to the warning acceleration of his strange heart.

"The leader," continued Corrips, "gray, grizzled, ruthless—paused and sniffed the air moving up the valley. He smelled reindeer blood a few hundred yards down the draw, also another, unknown smell, like yet unlike the noisome blend of grime, sweat and dung that characterized his own band."

Haven arose, tapped his pipe gently on the

ash tray lying on the big table, stretched his small, wiry frame with tigerish languor and walked slowly toward the coffee urn by the window.

Alar was now well into the final movement of *Pathetique*. He watched Haven carefully.

Corrips droned on resonantly without the faintest change of inflection, but Alar knew the ethnologist was watching his collaborator from the corner of his eye.

"The old man turned to the little band and shook his flint-tipped spear to show that the spoor had been struck. The other men held their spears up, signifying that they understood and would follow silently. The women faded into the sparse shrubbery of the valley slope.

"The men followed the reindeer path on down the gully and within a few minutes peered through a thicket at an old male Eoanthropus, three females of assorted ages and two children, all lying curled stuporously under a windfall of branches and debris that overhung the gully bank. Blood still drained sluggishly from a half-devoured reindeer carcass lying under the old man's head."

Alar followed Haven with narrowed eyes. The little biologist poured a cup of coffee of the consistency of mud, added a little cream from the portofrij and stirred it absently, the while looking out of the window from the shadows of the room.

"Some sixth sense warned Eoanthropus of danger. The old male shook his five-hundred-pound body and convulsed into a snarling squat over the reindeer, searching through nearsighted eyes for the rash interlopers. He feared nothing but the giant cave bear, *Ursus spelaeus*. The females and children scurried behind him with mingled fear and curiosity.

"Through the green foliage the invaders stared thunderstruck. It was immediately evident to them that the killers were some sort of animal, pretending to be men. The more intelligent of the Neanderthals, including the old leader, exchanged glances of wrathful indignation. Without more ado the leader broke through the brush and raised his spear high with an angry shout.

"He was seized by the conviction that these offensive creatures were strange, hence intolerable, that the sooner they were killed the more comfortable he would feel. He drew back his heavy spear and hurled it with all his strength. It passed through the heart of

Eoanthropus to protrude half a foot beyond the back."

HAVEN was frowning when he turned away from the window. He lifted the cup of coffee to his mouth and, just before he drank, his lips silently formed the words, "Audio search beam."

Alar knew that Corrips had caught the signal, even though the latter continued to read as though nothing had happened.

"The brute-mind behind that hurtling spear, faced with the problem of an alien people, arrived at a solution by a simple thalamic response, uncomplicated by censorship of the frontal lobes—kill first, examine later.

"This instinctive reaction, a vestige perhaps from the minuscule mental organization of his insectivore ancestor (*Zalambdolestes?*), dating probably back to the Cretaceous, has characterized every species of Hominidae before and since Neanderthal.

"The reaction is still strong, as three World Wars bear horrible witness. If the man with the spear could have reasoned first and hurled second, his descendants might have reached the stars within a very few millennia.

"And now that fissionable materials are being mined directly from the sun's surface in enormous quantities by America Imperial, the Western and Eastern hemispheres will not long delay another attempt to contest the superiority of their respective cultures. This time, however, neither side can hope for victory, stalemate, or even defeat.

"The war will end, simply because there will be no human beings left to fight—if we expect a hundred or so animal-like creatures huddling in the farthest corridors of the underground cities, licking their radiation sores and sharing with a few rats the corpses that lie so well-preserved everywhere (there being no putrefying bacteria remaining to decompose the dead). But even the ghouls are sterile and in another decade—"

There was a knock at the door.

Haven and Corrips exchanged quick glances. Then Haven put down his coffee and walked toward the foyer. Corrips looked quickly about the room, reaffirming the positions of their sabers, which hung with innocent decorativeness from straps among the Hominidae skeletons.

They heard Haven's voice from the hallway. "Good evening, sir—? Why, it's

General Thurmond. What a delightful surprise, general! I recognized you at once but of course you don't know me. I'm Professor Haven."

"Mind if I come in, Dr. Haven?" There was something chilling and deadly in that dry voice.

"Not at all! Why, bless my soul we're honored. Come in! Micah! Alar! It's General Thurmond, Minister of Police!"

Alar knew that the man's effusiveness covered unusual nervousness.

Corrips timed his approach so that the group would coalesce about the Hominidae. Alar, following close behind, observed uneasily that the ethnologist's hands were twitching. Were they so afraid of just one man? His respect for Thurmond was increasing rapidly.

Except for a piercing appraisal of Alar, Thurmond ignored the introductions. "Professor Corrips," he rasped gently, "you were reading something very peculiar just before I knocked. You know, of course, that we had a search beam on the study?"

"Did you? How odd. I was reading from a book that Dr. Haven and I are writing—*Suicide of the Human Race*. Were you interested?"

"Only incidentally. It's really a matter for the Minister of Subversive Activities. I shall report it, of course, for whatever action he deems best. But I'm really here on another matter."

Alar sensed the tension mount by a full octave. Corrips was breathing loudly—Haven, apparently, not at all.

Thurmond's feral eyes, he knew, had not missed the cluster of sabers dangling with the Hominidae.

"I understand that your quarters here are part of the 'M-Wing'—'M' for mutant?" asked Thurmond coldly.

"That's right," answered Haven. "The three of us are counselors and tutors for a group of specially gifted but handicapped young people who are not permitted to attend regular university classes." He wiped perspiring hands on the sides of his coat.

"May I see the register?" asked Thurmond.

The two professors hesitated. Then Corrips stepped to the desk and returned with a black book. He gave it to Thurmond, who leafed through it idly, examining two or three of the photographs with gloomy curiosity. "This chap with no legs," he said, "what

does he do for a living?"

Alar's pulse beat had climbed to one hundred and seventy a minute.

"He has just synthesized an edible protein from coal, air and water," offered Corrips. "That formula will permit a new sigmoidal growth curve for the Hemisphere population, with a new asymptote thirty-six percent higher than—"

"He can't carry a gun, can he?"

Alar watched the six black-shirted I.P.'s ease quietly into the room behind Thurmond.

"Of course not," snapped Corrips. "His contributions lie in an altogether different—"

"Then the government can't be expected to continue his support," interjected Thurmond calmly. He ripped the sheet from the book and handed it to the officer who stood just behind him.

"And here's another," he said, frowning at the next page. "A female with no arms, and with three legs. No use at all in a factory, is she?"

"Her mother," said Haven tightly, "was an ambulance driver in the Third War. This child collaborated with Kennicot Muir in determining the Nine Fundamental Equations that culminated in the establishment of our solarians on the surface of the sun."

"Associate of a known traitor and unfit for manual labor," murmured Thurmond, ripping the sheet out and passing it back.

"Just what does the lieutenant intend doing with those sheets?" asked Haven with a rising voice. He moved his hand carelessly to the clavicle of the Cro-Magnon skeleton, a few inches from the sabers.

"We're going to take all of your mutants away, professor. They are useless to the Imperium," said Thurmond.

Haven's mouth opened and closed. He seemed to shrink where he stood. Finally he said hesitantly: "That doesn't exactly answer the question, sir."

"Do you insist that I be precise? They will be sold to the highest bidder—probably a charnel house."

Alar found himself licking pallid lips. It could not be happening but it was happening. Twenty-two young men and women, some of the most brilliant minds in the Imperium, were going to be snuffed out with casual brutality—why?

Corrips' voice was hardly a whisper. "What do you want?"

"Alar," stated Thurmond icily. "Give me Alar and keep your muties."

"No!" cried Haven, staring white-faced at Thurmond. He turned to Corrips and found confirmation there.

Alar listened to his voice. It seemed that of another man. "I must go with you, of course," he said to Thurmond.

Haven shot out a restraining hand. "No, boy! You haven't the faintest idea what it's all about. You're worth far more than any two dozen minds on Earth. If you love humanity do as we tell you!"

CHAPTER V

The Projection

THURMOND called a quiet command over his shoulders. "Shoot them."

Six blasts of lead, urged by the titanic pressures of fission-generated steam, bounced harmlessly off the three and ricocheted about the walls.

The sabers were no longer hanging from the Hominidae.

And Thurmond's blade was lunging for Alar's heart.

Only the tightest breast parry saved the Thief. The lieutenant and his men, evidently hand picked, were forcing the two older men back down the wall.

"Alar!" cried Haven. "Don't fight Thurmond! The trapdoor! We'll cover you!"

The Thief flung an anguished look toward the professors. Haven broke free from the wall and joined Alar, who was as yet miraculously unbloodied. They immediately trashed into the wing of the grand piano.

The floor dropped from under them.

Alar's last view of the study was Corrips' body at the foot of the wall with his face cut away.

With a shriek of grief he flung his sword futilely at Thurmond and then the trap wings closed over his head.

In the semi-darkness of the earthen tunnel he accosted Haven bitterly. "Why didn't you let me go with Thurmond?"

"Do you think it was easy for Micah and me, boy?" panted the professor brokenly. "You'll understand some day. Right now we've got to get you to a safer place."

"But what about Micah?" insisted Alar.

"He's dead. We can't even bury him. Come along, now."

They hurried silently to the end of the tunnel, half a mile away, where it opened into a dead-end alley from behind a mass of debris.

"The nearest Thief rendezvous is six blocks up the street. You know the one?"

Alar nodded dumbly.

"I can't run as fast as you," continued Haven. "You've got to make it alone. You simply must. No questions. Off with you, now."

The Thief touched the older man's bloody sleeve silently, then turned and ran.

He ran swiftly in the center of the streets, easily, rhythmically, breathing through dilated nostrils. Everywhere were the thin, weary faces of free laborers and clerks returning from the day's work. Peddlers and beggars, dressed in drab cast-off garments but not yet slaves, dotted the sidewalks.

A thousand feet above him twelve or fifteen armed helicopters followed leisurely. He sensed that a three-dimensional net was closing in on him. Road blocks were proba-

[Turn page]

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bly being set up ahead as well as on the side streets.

He had two squares to go.

A trio of searchlights stabbed down at him from the darkening skies like an audible chord of doom. He'd have to get out of that. To attempt to dodge the beams was futile. Still, explosive shells would follow within seconds and a near hit could kill him.

Subconsciously he noted that the streets had suddenly become empty. When Thief-hunting the I.P.'s fired their artillery with fine disregard of careless street dwellers. He would never make the Thief underground station. He must hide now or never.

With flashing eyes he looked about him, and found what he wanted, an entrance to the slave underworld.

It was fifty yards away and toward it he sprinted frantically.

Above him he knew some thirty narrowed eyes were squinting into gun sights, trigger fingers with cool, unhurried efficiency were squeezing. . . .

He flung himself into the gutter.

The shell struck ten feet in front of him. He was up instantly, coughing and stunned, but invisible in the swirling dust clouds. Pieces of brick and cobblestone were falling all about him. Two of the spotlights were roving nervously over the edge of the cloud nearest the underworld entrance. The other was playing rapidly and erratically around the periphery of the cloud. He couldn't even make the slave entrance. He waited for the spotlight to pass, then dashed for the nearest tenement door.

The door was boarded and locked. He pounded frantically.

For the first time he felt—hunted. And with that cornered feeling time slowed down and finally crept. He knew that his senses had simply accelerated. He noted several things. His ears caught the heavy grinding of an armored car churning around the corner on two wheels, with headlights that swept the entire street.

He saw that the dust had settled and that two of the 'copter search lights were combing the area methodically. A third beam had settled motionless on the underground stairway entrance. That beam was the only real obstacle. It was a neat problem in stimulus-response physiology. Stimulus—observer sees object enter white circular field ten feet in diameter. Response—pull trigger before object leaves field.

LIKE a frightened deer he leaped between the two converging beams of the armored car and sped toward the brilliantly-lighted stairs. He was struck twice by small-arm fire from the car but his armor absorbed it easily. By the time the turret gun could be trained on him—

He was in the lighted area of the stairs now, hurtling downward toward the first landing. He had tried desperately to clear all the steps and he did. He crashed to the concrete platform and immediately stretched out flat as a shell shattered the entrance.

He was up again instantly, tearing down the remaining flights to the first underground level of the slave city. It would take his pursuers a few seconds to pick their way through that wreck of muck and rubble. He would need the delay.

He eased out of the stairway cautiously, leaned against the wall and peered about him, sucking in the foul air gratefully. On this level lived the higher-class slaves, those who had sold themselves into bondage for twenty years or less.

It was time for the night shifts to be leaving the slave compounds, accompanied by bullet-browed squad masters. They would be transported to the fields, mines, mills or wherever the slave contractor ordered them sent. There they would work out the nameless fraction of their lives that they had sold.

By crossing through these grim work parties he should be able to make his way to the ascending stairs *behind* the armored car and resume his flight to the Thief hideaway.

But not a person was moving in the silent substreets.

The row on row of slave compounds, up and down the narrow streets, were shut up tightly. That could not have been done within a few minutes. It bespoke hours of preparation by Thurmond. It must be that way on every level, even to Hell's Row, where diseased and manacled wretches labored in eternal gloom. He whirled in alarm. An armored car was rolling through the darkened street toward him.

He understood then that most of the small mobile artillery available to Thurmond from his own police forces as well as a considerable contingent borrowed from Eldridge of the War Department, had been placed strategically on all slave levels, hours before, just to kill him.

They had driven him underground to finish him.

But why? Why was it so important to kill him? Not because he was a Thief. The government harbored a vengeful bitterness against Thieves but this was a turnout of force on a scale for suppressing revolution.

What gigantic danger did he represent to Haze-Gaunt?

Haven and Corrips must have known more about him than they had ever admitted. In the remote event he ever saw Haven again, he would certainly have some questions to ask him.

Down the street to the left another armored car was rumbling up. Almost simultaneously searchlights shot from both cars, blinding him. He dropped to the ground and buried his face in the crook of his arm. The two shells exploded on the steel wall behind him and the concussion threw him into the center of the street between the oncoming cars.

His coat was ripped to shreds and his nose was bleeding. His head was spinning a bit, but otherwise he was undamaged. For the moment he decided to lie where he had fallen.

One of the spotlights was playing over the dust cloud, waiting for it to settle and reveal a corpse. The other was darting nearly everywhere along the street except where Alar lay, on the bare chance the shot had not been fatal. In a few seconds the accusing finger of light must point at him and the grim game would continue.

It would not be a long game.

As he lay there in the foul humid dirt he wished fervently that he had the legendary lives of the cat, and that one of them would emerge from that luminous cloud of dust and—

Who was that?

A man with a tattered coat very like his own stumbled through the haze, looked up the street both ways, noting the armored cars, now very near, then began to run quickly along the steel wall that paralleled the street from the entrance stairway.

While Alar stared thunderstruck the farthest car, now about abreast of the stranger, fired point blank. At the same time the other pursuing car passed within a few inches of the Thief and sped on to the chase.

Now if the stranger emerged unscathed from that sure hit . . . ! And he did! Hugging the wall, the shadowy form continued to run up the street.

Two more explosions came, very close together.

Even before he heard them, Alar was running down the dark street in the opposite direction.

Within forty seconds, if he were lucky, he would reach the stair formerly guarded by the first car and would be "upstairs" again. There he would have time to wonder about the man who, perhaps unwittingly, had saved his life.

Had some fool blundered through the police blockade at the head of the stairs into the blossoming shell dust? He rejected that immediately, not only because he trusted the I.P.'s to maintain a leakproof watch over the entrance above but also because he had recognized the face. He had seen it many times before: The slightly bulging brow, the large dark eyes, the almost girlish lips—yes, he knew that face well.

It was his own.

CHAPTER VI

Imperial Refuge

AN HOUR later Alar—poised statue-like on the marble sill, balancing on one knee with steel fingertips extended to the cold stone surface—stared.

The woman was about his own age, dressed in a white evening gown of remarkable softness and luster. Her long blue-black hair, interlaced with inconspicuous gold netting, was gathered in a wide band over her left bosom.

Her head seemed unusually large, rather like his own, with large black eyes that studied him carefully. The expertly rouged lips were in odd contrast to the pale, utterly expressionless cheeks. She was not standing straight, but with her left hip slightly dipping, so that the left thigh and knee were sharply defined beneath her gown.

The whole impression was one of alert hauteur.

Alar was conscious of a growing, indefinable elation. He slipped noiselessly down to the floor and moved to the side of the window, where he was invisible from the courtyard, and turned to face her again—just as something flashed by his face and buried itself in the wall paneling at his ear.

He froze.

"I am glad you are logical," she replied

quietly. "It saves time. Are you the fugitive Thief?"

No answer.

The girl took several quick steps toward him, simultaneously raising a second knife. It gleamed wickedly in the soft light.

"It will be to your advantage to answer truthfully and quickly," she said. "If you are the Thief produce your mask."

He shrugged his shoulders and pulled out the mask.

"Why didn't you go to your Thief rendezvous? Why did you come here?"

He peered at her narrowly. "I tried. All paths were blocked for miles. The weakest protection led here, to the chancellory. Who are you?"

Keiris ignored the question. "I have to put in an appearance at the ball," she mused. "Yet I can't desert you. These rooms will be searched before the hour is out."

"Ball?" The Thief considered the possibilities rapidly. "Why can't I come along? I'll even escort you."

She studied him curiously. "This is a masked ball."

"Like this?" He pulled on the Thief mask coolly.

Her eyes widened imperceptibly. "I accept your invitation."

If he had not, one short hour ago, lost all sense of probability and proportion, he might have toyed briefly with such words as fantastic, preposterous and insane and wondered when the whistle of the coffee urn would awaken him.

He bowed ironically.

"It is my pleasure."

She continued without humor, "You intend, of course, to leave the festival rooms at the first opportunity. Let me assure you that it would be very dangerous. You are known to be in this vicinity, and the palace grounds are swarming with police."

"So?"

"Wander through the ballroom and assembly room for a while and then we'll try to arrange your escape."

He had no choice and nodded his head. "Tell me this," he said, "what do the newscasters say about the affair at M-Wing?"

She hesitated for the first time, but seemed to lose none of her poise. "Dr. Haven escaped."

He sucked in his breath. "And the mutants?"

"Sold."

He leaned wearily against the wall, and gradually became conscious of sweat dripping in irritating rivulets down his legs. His armpits were soaking, his face and forearms were stinging with an odorous melange of perspiration and grime.

"I'm sorry, Thief."

He looked at her and saw that she meant it. "It's over, then," he said heavily, walking to her vanity dresser and peering into the mirror. "I shall need a shower and depilatory. And some clothes. Can you find some for me? And don't forget a saber."

"I can provide everything. You'll find the bathroom over there"

FIFTEEN minutes later she took his right arm and they walked sedately down the hall toward the broad stairs that coiled in one beautiful sweep to the great reception chamber. Alar fussed nervously with his mask and eyed the magnificent tapestries and paintings that lined the cold marble walls.

Everything was in exquisite taste, but he got the impression that it was the hired taste of a decorating firm—that the people who passed their brilliant, insecure days in these rooms had long ago lost their ability to appreciate the subtle sunlight of Renoir or the cataclysmic color-bursts of Van Gogh.

"Leave your mask alone," whispered his companion. "You look fine."

They were descending the stairs now. He couldn't seize the whole picture—just isolated scraps. This was existence on a scale he had never expected to experience. Solid gold stair handrail. Carpets with pile that seemed to come up to his ankles. Intricately sculptured Carrara balusters. Luminous alabaster lighting everywhere. The vista of the reception chamber rushing up to them. A thousand unknown men and women.

It was all strange but he felt that he had known it all forever, that he belonged here.

From time to time the brightly uniformed reception master announced the names of late-comers through the public address microphone. Here and there, among the sea of heads, were eyes staring up at him and the woman.

And suddenly they were at the foot of the stairs, and the reception master was bowing deeply and saying:

"Good evening, madame."

"Good evening, Jules."

Jules eyed Alar with apologetic curiosity. "I'm afraid, excellency—"

The Thief muttered coldly, "Dr. Hallmarck."

Jules bowed again. "Of course, sir." He picked up the microphone and called smoothly: "Dr. Hallmarck, escorting Madame Haze-Gaunt!"

Keiris ignored the look the Thief threw at her. "You don't have to wear your mask all the time," she suggested. "Just when you see some one looking suspicious. Come along; I'll introduce you to a group of men. Work yourself into an argument and no one will pay any attention to you. I'm going to leave you with Senator Donnan. He's loud, but harmless."

Senator Donnan threw back his barrel chest impressively. "I run a free press, Dr. Hallmarck," he said to Alar. "I say what I want to. I print what I want to. I think even Haze-Gaunt would be afraid to close me down. I get on people's nerves. They read me whether they want to or not."

Alar looked at him curiously. The stories he had heard of the Senator had not left an impression of a Champion of the Downtrodden. "Indeed?" he said politely.

The Senator continued. "I say, treat the slaves as though they were once human beings, just like ourselves. They've got rights, you know. Treat 'em poorly, and they'll die on you. The slaves in my printing shops used to complain of the noise. I gave them relief."

"I heard about that once, Senator. Very humane. Removed their eardrums, didn't you?"

"Right. No more complaints, now, about anything. Hah! There's old Perkins, the international banker. Hiya, Perk! Meet Professor Hallmarck."

Alar bowed, Perkins nodded sourly.

Donnan laughed. "I killed his Uniform Slave Act in the Senate Slave Committee. Old Perk is unrealistic."

"Most of us thought your proposed Slave Act rather striking, Mr. Perkins," said Alar suavely. "The provision for the condemnation and sale of debtors particularly interested me."

"A sound clause, sir. It would clear the streets of loafers."

Donnan chuckled. "I'll say it would. Perk controls eighty percent of the credit in the Imperium. Let a poor devil get a couple of unitas behind in his installment payment and bang—Perk has himself a slave worth several thousand unitas, for almost nothing."

The financier's mouth tightened. "Your statement, Senator, is exaggerated. Why the legal fees alone . . ." He moved away, mumbling.

Donnan seemed vastly amused. "All kinds here tonight, professor. Ah, here comes something interesting. The Imperatrix, Juana-Maria, in her motorchair with Shimatsu the Eastern Fed Ambassador and Talbot, the Toynbeean, on either side of her.

ALAR joined the group in a deep bow as the trio drew near and regarded the titular ruler of the Western Hemisphere curiously. The Imperatrix was an old woman, small and twisted in body, but her eyes sparkled and her face was mobile and attractive, despite its burden of wrinkles.

It was rumored that Haze-Gaunt had caused the bomb to be planted in the Imperial carriage that had taken the lives of the Imperator and his three sons, and that had left the Imperatrix bedridden for years and consequently incapable of vetoing his chancellorship. By the time she had been able to get about in a motorchair the reins of the Imperium had passed completely from the House of Chatham-Perez into the hardened palms of Bern Haze-Gaunt.

"Gentlemen, good evening," said Juana-Maria. "We're in luck tonight."

"We're always lucky to have you around, ma'am," said Donnan with genuine respect.

"Oh, don't be idiotic, Herbert. A very important and dangerous Thief, a Professor Alar at the University—(can you imagine?)—escaped a strong police trap and has been traced to the palace grounds. He may be in the palace at this very moment.

"General Thurmond is seething in his quiet way, and he's thrown up a perfectly tremendous guard around the grounds and is having the whole palace searched. He is taking personal charge of our protection. Isn't it thrilling?" Her voice seemed dry and mocking.

"Glad to hear it," commented Donnan with sincerity. "The rascals looted my personal safe only last week. Had to free forty men to get the stuff back. It's high time they caught the ringleaders."

Alar swallowed uncomfortably behind his mask and looked about him covertly. There was no sign of Thurmond yet but several men that his trained eye identified as plain-clothes I.P.'s were filtering slowly and attentively through the assembly. One of them,

several yards away, was studying him quietly. Finally he passed on.

"Why don't you yourself do something about the Thieves, your majesty?" demanded Donnan. "They're ruining your Imperium."

Juana-Maria smiled. "Are they really? But what if they are—which I doubt! Why should I do anything about it? I do what pleases me. My father was a politician and a soldier. It pleased him to fuse the two Americas into one during the Third War. If our civilization survives a few hundred years longer, he will undoubtedly be accorded his place as a maker of history."

"But it pleases me merely to observe, to understand. I am purely a student of history—an amateur Toynbeean. I watch my ship of empire founder. If I were my father I would patch the sails, mend the ropes and beat out to clearer waters. But, since I am only myself, I must be satisfied to watch and to predict."

"Do you predict destruction, your majesty?" queried Shimatsu behind narrowing eyes.

"Destruction of what?" queried Juana-Maria. "The soul is indestructible, and that's all that's important to an old woman. As to whether my chancellor intends to destroy everything else . . ." She shrugged her fragile shoulders.

Shimatsu bowed, then murmured, "If your new super-secret bomb is as good as our agents say we have no defense against it. And if we have no defense we must meet the attack of Haze-Gaunt with our own attack as long as we are able. And we have two advantages over you imperials.

"You are so certain that you have an overwhelming balance of force that you have never troubled to evaluate the weapons that may be used against you. Also, you have assumed that we must wait politely and let you choose the moment. May I suggest, your majesty, and gentlemen, that the Imperium is run, not by the famed 'wolf pack' but by credulous children?"

Donnan laughed unroariously. "There you have us!" he cried. "Credulous children!"

Shimatsu picked up the bear cape that he had been carrying over one arm and threw it around his shoulders in a gesture of finality. "You are amused, now. But when your zero hour draws close, prepare for a shock." He bowed deeply and passed on.

Alar knew that the man had issued a deadly warning.

"Now isn't that an odd coincidence?" observed Juana-Maria. "Dr. Talbot was telling me only a few minutes ago that the Imperium stands at this moment with the Assyrian Empire as of Six Hundred and Fourteen B.C. Perhaps Shimatsu knows whereof he speaks."

"What happened in Six Hundred and Fourteen B.C., Dr. Talbot?" asked Alar.

"The world's leading civilization was blasted to bits," replied the Toynbeean, stroking his goatee thoughtfully. "It's quite a story. For over two thousand years the Assyrians had fought to rule the world as they knew it. By Six Hundred and Fourteen B.C. the Assyrian ethos dominated an area extending from Jerusalem to Lydia. Four years later not one Assyrian city remained standing. Their destruction was so complete that when Xenophon led his Greeks by the ruins of Nineveh and Calah two centuries later, no one could tell him who had lived in them."

"That's quite a knockout, Dr. Talbot," agreed Alar. "But how do you draw a parallel between Assyria and America Imperial?"

"There are certain infallible guides. In Toynbecan parlance they're called 'failure of self-determination,' 'schism in the body social' and 'schism in the soul.' These phases of course all follow the 'time of troubles,' 'universal state' and the 'universal peace.' These latter two, paradoxically, mark every civilization for death when it is apparently at its strongest."

Donnan grunted dubiously. "Amalgamated Nuclear closed at five hundred and six this morning. If you Toynbeans think the Imperium is on the skids you're the only ones."

Dr. Talbot smiled. "We Toynbecans agree with you. Yet we don't try to force our opinions on the public, for two reasons. In the first place Toynbeans only *study* history—they don't make it. In the second place nobody can stop an avalanche."

DONNAN remained unconvinced. "You long-haired boys are always getting lost in what happened in ancient times. This is here and now—America Imperial, June Sixth, Two Thousand One Hundred Seventy-seven. We got the Indian sign on the world."

Dr. Talbot sighed. "I hope to God you're right, Senator."

Juana-Maria said, "If I may interrupt . . ." The group bowed.

"The Senator may be interested in learning that for the past eight months the Toynbeans have devoted themselves to but one project—a re-examination of their main thesis that all civilizations follow the same inevitable sociologic pattern. Am I right, Dr. Talbot?"

"Yes, your majesty. Like other human beings we want to be right. But in our hearts we hope rather desperately that we'll be proved wrong. We grasp at any straw. We examine the past to learn if there weren't some instances where the universal state was not followed by destruction.

"We search for examples of civilizations that endured despite spiritual stratification. We look at the history of slavery to see whether the enslaving society ever escaped retribution.

"We compare our time of troubles—the Third War—with the Punic Wars that reduced the sturdy Roman farmer class to slavery and we study the Civil War of our North American ancestors over the slavery question. We consider then how long the Spartan Empire continued after the Peloponnesian War ground its once proud soldiery into serfdom.

"We seek comparisons in the past for our divided allegiance between the ancestor-worship taught our boys and girls in the Imperial Schools and the monotheism followed by our older people. We know what a divided spiritualism did to the Periclean Greeks, the Roman Empire, the budding Scandinavian society, the Celts of Ireland and the Nestorian Christians.

"We compare our present political schism—the Thieves versus the Government—with the bitterly opposed but unrepresented minorities that finally erased the Ottoman Empire, the Austro-Hungarian League and the Later Indic society as well as various other civilizations.

"But we have found no exceptions to the pattern so far."

"You mentioned the institution of slavery several times as though it were undermining the Imperium," objected Donnan. "How do you arrive at that conclusion?"

"The rise of slavery in the Imperium precisely parallels its rise in Assyria, Sparta, Rome and all the other slave-holding empires," answered Talbot carefully. "No culture can wage war for several generations without impoverishing its peasantry. A goodly fraction of the population in both the con-

quering and conquered countries have no assets but their own bodies.

"They are swallowed up by their richer brethren under contracts of bondage. Since their produce is not their own they have no means to better the lot of their numerous progeny and a perpetual slave class is born. The present population of the Imperium is over one and a half billion. One third of these souls are slaves."

"True," agreed Donnan, "but they don't really have such a hard lot. They have enough to eat, and a place to sleep—something a great many freeman don't have."

"That, of course," observed Juana-Maria dryly, "is a great recommendation for both free enterprise and for the slave system. To buy bread for his starving children, their father can always sell them to the highest bidder. But we're getting off the main track. What are your methods of evaluation, Dr. Talbot? How do you determine what cultural samples to take and what weight to give each?"

"The historian can evaluate his own society only as a weighted synthesis of its microcosmic components," admitted Talbot, tugging again at his goatee. "He can establish at best a probability as to the stage it has reached in the invariant pattern for civilizations. However, when he studies group after group, as I have, from the noblest families (your pardon, your majesty) right down to the bands of escaped slaves in the waste provinces of Texas and Arizona—"

"Ever studied the Thieves, Dr. Talbot?" interrupted Alar.

CHAPTER VII

The Wolf Pack

THE Toynbeean studied the masked man curiously. "The Thieves are unapproachable, of course, but the Society is just a rubber stamp of Kennicot Muir and I knew him well some years before he was killed. He realized all along that the Imperium was living on borrowed time."

"But how about our tiny settlements on the Moon, Mercury and the Sun?" insisted Alar. "There you ought to find enough vaulting optimism to negate the whole of the fatalism you've found here on Earth."

"For our Lunar Observatory Station I expect that's true," agreed Talbot, "assuming that you consider them as an independent society separate from the lunar fortifications. The morale of the few hundred men there should be high, owing to the flood of knowledge that continues to flow into the two-hundred meter reflector.

"The Mercury station is of course purely derivative of the solar stations and stands or falls with them. Your suggestion is interesting, because it so happens the Toynbeans have finally received permission from Minister of War Eldridge to let one of our staff visit a solarian on the sun for twenty days and I have been selected to go."

"How delightful!" exclaimed the Imperatrix. "What do you expect to find?"

"The very apotheosis of our civilization," replied Talbot gravely, "with all pretense and indirection thrown to the winds. In Solarion Nine I expect to find the distilled essence of Toynbee Twenty-one—thirty madmen hell-bent on suicide."

Alar heard the last few words only perfunctorily because his heartbeat was accelerating alarmingly.

Shey, Thurmond, and a man he took to be Haze-Gaunt were passing by his elbow. He turned his back and shrank toward the wall.

The three paid him no attention whatever but walked rapidly toward the orchestra pit. From the corner of his eye Alar saw Thurmond say something to the conductor. The music stopped.

"May I apologize for this interruption, my lords and ladies?" came the chancellor's rich baritone over the speakers. "A very dangerous enemy of the Imperium is believed to be in the ballroom at this moment. I must ask, therefore, that all men who have not already done so remove their masks in order that the police may apprehend the intruder. This need not mar nor delay our festivities! On with the dance!" The chancellor nodded to the conductor and the great orchestra crashed into *Taya of Tehuantepec*.

An excited buzz sprang up everywhere as the bright-plumaged males began removing their masks and looking about them. Gradually the couples were reabsorbed on the dance floor. As Alar slid along the wall his hand went to his mask, then dropped slowly. His strange heart began to beat even faster.

Several things were clamoring for his attention. The dancers were now taking notice

of him even in the shadowed portion of the tapestried wall where he leaned. From the air, it seemed, several men in gray with I.P. service sabers crystallized a few feet from him on either side.

They were just standing there quietly, seemingly absorbed in the whirling gayety. Two more leaned unobtrusively against a great column some twelve feet ahead. Alar's brown Thief mask was about as inconspicuous here as a red rag in front of a bull. He must have been mad to wear it.

His tongue worked dryly in his mouth. He carried an unfamiliar blade. He was exhausted—living on pure nervous energy. Even if his roving eyes could spot an exit opening on the gardens.

"Your mask, sir?"

It was Thurmond—standing squarely before him, hand on rapier pommel.

For a long, horrid moment the Thief thought his legs would give way and drop him to the marble flagging. At best he could not avoid the reflex action of licking his lips.

The police minister's feral eyes missed nothing. His mouth curled faintly. *"Your mask, sir?"* he repeated softly.

The man must have approached him from behind the column, and made one of the shadowy cat-leaps for which he was famous—and feared. He was drawing his blade slowly, seeming to take an almost sensuous pleasure in the Thief's rapid breathing.

"Faut-il s'éloigner le masqué? Pourquoi?" asked Alar huskily. *"Qu'êtes vous?"*

The barest shadow of doubt crossed Thurmond's face. But his blade was now out. Its point flashed even in the subdued light of the ball room. "The chancellor would still like a conference with you," continued Thurmond. "If I can't arrange that I'm to kill you. Conferences are just so much idle chatter and you might get lost on the way. So I'm going to kill you. Here. Now."

Alar finally got a deep breath.

There were other flashes of steel around him now. The gray men along the wall had drawn their blades and were sidling toward him.

Two or three couples had stopped dancing and were staring in fascination at his approaching murder.

A BLUR! And Thurmond was suddenly one step closer. It was simply impossible for a human being to move so fast. It was clear now why poor Corrips—

no mean swordsman—had lasted but seconds before the slashing wizardry of Giles Thurmond. And yet the man held back. Why? That phony diplomatic French must have removed his one-hundred-percent certainty. Thurmond evidently did not intend to kill him until the mask was off.

"Vous m'insultez, tovarich," clipped Alar. *"Je vous demande encore, pourquoi dois-je déplacer le masque? Qu'êtes vous? Je demande votre identité. Si vous désirer un duel, mes seconds—"*

Thurmond hesitated. *"Il faut déplacer le masque,"* he said curtly, *"parceque il y a un ennemi de l'état au bal. C'est mon devoir, de l'apprendre. Alors, monsieur, s'il vous plaît, le masque—"*

The police minister had now taken care of the one-in-a-million possibility that Alar was actually a visiting dignitary who had not understood the chancellor's announcement. He was now ready to kill the Thief whether or not he removed his mask.

Alar's mind began to float in that curiously detached way that ignored time. His heart, he noted, had leveled off at 170. Within one or two seconds he would be impaled by Thurmond's blade against the thick tapestries, writhing like an insect. That was no way for a Thief to die.

"Madame, messieurs!" he bowed in utter gratitude.

Keiris had rounded the column with the chancellor and Ambassador Shimatsu on either arm. Thurmond's blade, an inch in front of his heart, wavered.

"Madame," continued the Thief smoothly, *"voulez-vous expliquer à cette homme mon identité?"*

Keiris' eyes were wide with something nameless. This moment, one that she had dreaded for years, had finally come. If she saved the life of the Thief her double life must soon be discovered. What would happen to her then? Would Haze-Gaunt sell her to Shey?

She said quietly, "You have made a grave mistake, General Thurmond. May I introduce Dr. Hallmarck, of the University of Kharkov?"

Alar bowed. Thurmond sheathed his weapon slowly. It was clear that he was unconvinced.

Shimatsu, too, was studying Alar dubiously. He started to speak, then hesitated, finally said nothing.

Haze-Gaunt fixed hard eyes on the Thief.

"We are honored, sir. But as a matter of courtesy, it might be well to—" "

"Comment, monsieur?" Alar shrugged his shoulders. *"Je ne parle pas l'anglais. Veuillez, madame, voulez-vous traduire?"*

The woman laughed artificially and turned to the chancellor. "The poor dear doesn't know what it's all about. He has this dance with me. I'll get his mask from him. And you really ought to be more careful, General Thurmond."

She was talking before they were well away. "I doubt that you can escape now," she said hurriedly. "But your best chance will be to do exactly as I say. Remove your mask immediately."

He did so, placed it in his jacket pocket. She had maneuvered him carefully, so that he faced away from the chancellor's group.

His arm was around her now and they glided in a slow whirl across the room. To have her so close, with her body continuously touching his, reactivated the tantalizing memory syndrome of the balcony—only now it was doubled, redoubled.

He was not much taller than she and his nostrils once got buried in the fine black hair at her temple. Even its odor was exasperatingly familiar. Had he known this woman at some time in his phantom past? Probably not. She had given no hint of recognition.

"Whatever you have in mind," he urged nervously, "do it quickly. As we left them Shimatsu was telling Haze-Gaunt that I spoke English. That's all Thurmond needs."

They were through the milling crowd now and in the shadowed fountain gallery.

"I can't go any farther, Alar," said the woman rapidly. "At the end of this corridor is a refuse chute. It will drop you into one of the incinerator pits in the bowels of the palace. The incinerators will be fired at any moment but you'll have to take the chance. You'll find friends in a great vault adjoining the incinerators. Are you afraid?"

"A little. But who are these 'friends'?"

"Thieves. They're building a strange space-ship."

"The T-twenty-two? But that's an imperial project. It's guarded tighter than a drum. The Undersecretary for Space, Gaines, is in charge himself."

"Two I.P.'s are coming up the hall," she countered quickly. "They're sure about you now. You'll have to run for it."

"Not yet. They think I'm cornered and they'll wait for reinforcements. In the mean-

time, what about you? Haze-Gaunt isn't going to like this." His hands were on her shoulders. They looked at each other silently a moment, bonded by their unknown and dangerous futures.

"I'm not afraid of him. It's Shey, the psychologist. He knows how to hurt people so that they will tell him whatever he wants to know. Sometimes I think he tortures just for the sake of seeing suffering. He wants to buy me—for that—but so far Haze-Gaunt hasn't let him touch me. Whatever you do, avoid Shey."

"All right, I'll keep away from him. But why are you doing this for me?"

"You remind me of someone I used to know," replied the woman slowly. She looked behind her. "For God's sake, hurry!"

His fingers tightened insistently on her shoulders. "Who is this person I remind you of?" he cried harshly.

"Run!"

He had to.

WITHIN seconds he was at the chute door, flashing frantic fingers over it. There was no handle. The rush of feet sounded just behind him. Of course there was no handle—the thing was hinged inward.

He plunged into the narrow blackness and was swirled around and around as he shot down. If he crashed into a pile of anything solid at this velocity, he would certainly break both legs. In the very act of trying to slow his descent by turning out his knees and elbows, he hurtled through the darkness into a mass of something foul and yielding. He was on his feet almost before the clouds of dust began to rise.

The blackness was complete save for a beam of light from one side of the incinerator that was his prison. It was apparently the operator's peep hole in the charging door. He stumbled over to the peep hole, blinked and peered out.

The great room was deserted.

He rattled the door cautiously, and tried the iron drop-latch.

It was locked from outside.

The Thief wiped his forehead with his sleeve, drew his saber and pried tentatively at the lock mechanism. It was too solid.

The soft grate of steel on steel echoed mockingly within the narrow confines of the incinerator as he replaced the weapon.

He had begun to feel his way slowly around his prison when he heard footsteps on the concrete floor outside.

The furnace door opened and a mass of flaming rubble sailed past his horrified eyes.

The door clanged shut just as he leaped to smother the torch with his chest.

The shaft of light was gone. A slave janitor was probably peering into the darkness, and wondering.

The Thief heard a muffled curse, then the sound of fading footsteps. He was at the door instantly.

The slave ought to be back in a minute or two.

And he was. This time the ignition wad was larger. The peep hole was closed a long time as the slave made sure the charge was burning properly. Finally he went away and the Thief removed his saber point from the lock engagement and eased the door open. Cold air rushed into his scorched lungs and over his blistered face.

He was on the floor instantly, forced himself to take time to close and relock the door. Precious seconds were gone but it might delay his pursuers if they had to look in every incinerator for him.

He vanished, wraithlike, between the bulge of two furnaces and headed toward the west wing and the fabulous *T-twenty-two*.

Was the brilliant Gaines really a Thief? If he were, did that mean that Haze-Gaunt's government was riddled with members of the Society?

Two things were certain. The wolf pack knew a great deal about him. To them he was something more than a Thief. Why did he say *something*? Wasn't he human? And the Society of Thieves had placed an incredible value on his life. Furthermore, Haven knew as much or more about him than the wolf pack. He had some pressing questions to ask him if ever he saw his friend again.

He opened the door to the great vault chamber a quarter of an inch and peered along the inner wall. Nothing moved. From far away, toward the center of the chamber, he heard the hiss of the nucleic welders.

Very quietly he slipped inside the door—and sucked in his breath sharply.

Even in the dusky gloom the *T-twenty-two* shimmered with a pale blue haze. Her sleek, sheer flanks shot a hundred-fifty feet into the air but she was less than eight feet in diameter at her waist. A great moon freighter would make several hundred of her.

But the thing that troubled him, the thing that seized his mind and blanked out the trip-hammering of his heart, was this—

He had seen the *T-twenty-two* before—*years* before.

Even as the sandbag crashed into his head, and even as he clawed futilely toward consciousness, he could only think—*T-twenty-two—T-twenty-two—where—when?*

CHAPTER VIII

Discovery Through Torment

"**H**E'S regaining consciousness," sniggered the voice.

Alar sat upon one knee and peered out from aching eyes.

He was in a large cage of metal bars, barely tall enough for him to stand. The cage stood in the center of a large stone-walled room. All about him was a raw, musty odor. The rawness, he realized with quivering nostrils, was blood. In these rooms the imperial psychologist practised his inhuman arts.

"Good morning, Thief!" burbled Shey, rising up and down on tiptoe.

Alar tried in vain to swallow, then struggled to his feet. For the first time in his life he was thankful that he was utterly exhausted. In the long hours that would follow he could faint easily and frequently.

"It has been suggested to me," chirped Shey, "that with proper stimulation you might demonstrate powers not before known in human beings—hence the iron cage that now holds you. We would like to see a good performance—but without danger to ourselves or the risk of losing you."

Alar was silent. Protests would avail him nothing. Furthermore it would not improve things for Shey to recognize the voice of the Thief that had so recently robbed him.

The psychologist drew closer to the cage. "Pain is a wonderful thing, you know," he whispered eagerly. He rolled up his right sleeve. "See these scars? I held hot knives there as long as I could. The stimulation—ah!" He inhaled ecstatically. "But you'll soon know, won't you? My difficulty is that I always release the knife before I attain maximum stimulation. But with someone else to help as I shall help you—" He smiled engagingly. "I hope you won't disappoint us."

Alar felt something cold crawl slowly up his spine.

"Now," continued the psychologist, "will

you hold out your arm and let the attendant give you an injection or do you prefer that we crush you between the cage walls to administer it? Just a harmless bit of adrenalin so you won't faint—for a long, long time."

There was nothing to be done. And in a way he was even more curious than Shey as to what would happen. He thrust out his arm in grim silence and the needle jammed home.

The phone buzzed. "Answer that," ordered Shey.

"It's from upstairs," called the attendant. "They want to know if you've seen Madame Haze-Gaunt."

"Tell them no." The matter was apparently closed.

Additional attendants wheeled up a heavy hinged case, opened it and began to take things from it and to lay them on the table. Still others rolled the cage walls together, flattening the Thief like a bacillus between microscope slides.

Alar listened vaguely to the sweat plashing from his chin to the stone floor, providing an insane obbligato to the strumming of his adrenalin-fed heart. From behind him somewhere wafted the odor of red-hot metal.

At least Keiris had got away.

* * * * *

It was twilight and, because there was no longer any pain, he thought for a moment that he was dead. Then he stood up and looked about him in wonder. In this world he was the only moving thing.

He was suspended in space near a silent, winding column. Gravity was banished here. There was no up, no down, no frame of reference for direction, so the column was neither necessarily vertical nor horizontal. He rubbed his eyes. The physical contact of palm to face seemed real. This was no dream. Some enormous soul-shaking thing had happened to him that he could not fathom. Here there was no movement, no sound, nothing but the column and a vast brooding silence.

Gingerly he reached out to touch the column. It had a strangely fluid, pliant quality, like a ray of light bending. And it had a strange shape. The part that he touched was a five-finned flange that extended from the central portion of the column.

If he had a power saw, he thought, how simple it would be to saw out innumerable arms with hands and fingers. Touching the flange lightly, he floated around the column to the other side, where he found an identical five-finned arrangement. He frowned.

perplexed. Farther around the column were leg-like fins.

His eyes brightened as he realized that a cross-section of this column would resemble very closely the vertical cross-section of a human being. Looking about, he discovered that the column appeared to go on indefinitely.

He then floated along it in the opposite direction for some minutes, noting that it gradually grew smaller in cross section. The cheek outline was thinner, the bones more prominent. The outline might be that of a skinny youth. Even farther on, the column was still smaller, and, by straining his eyes, he thought he could see where it shrank to a thread in the distance.

The Thief believed his life depended on the solution to this mystery, but cast about as he might the answer eluded him.

He returned slowly, pensively, and studied the column at approximately the point where he had found himself when he recovered consciousness. He knotted his jaws in exasperation.

PERHAPS the interior of the column held an explanation. He thrust an arm into it slowly, and noted with interest that some plastic force seemed to draw his fingers into the five-finned portion of the column. He stuck in his right leg. That fitted perfectly.

Tentatively, he eased the rest of his body into the column.

And then something immense and elemental seized him and flung him—

"He's regaining consciousness," sniggered the voice.

Alar sat up on one knee and peered out from aching eyes.

His head was whirling. He was in the center of the cage, not crushed between the walls. There was no blood on him anywhere and somehow his shirt and coat had got back on him. Everything—the position of the men, the table, the instruments—were in the same places as when he first awakened in the cage an infinity ago, before the injection and the pain.

Had the pain really been just a nightmare, topped off by that queer episode of the man-shaped column? Was it just an illusionary *déjà vu* to expect Shey to rise up and down on tiptoe and burble—

"Good morning, Thief!" burbled Shey, rising up and down on tiptoe.

Alar felt the blood draining from his face. He understood one thing very clearly. Through means utterly incomprehensible to him he had, for a time, left the time stream and had re-entered it at the worst possible locus. He knew that this time his resolution would falter—that he would talk and that his comrades would die. And he had no weapon, no means to prevent this catastrophe that was finally upon him.

Except—his heart bounded in fierce joy and he listened to his calm icy voice. "I think that you will release me very soon."

Shey shook his curly head in rare good humor. "That would spoil everything. No, I won't release you for a long time. I might even say—never."

Alar's lips compressed in a chill confidence he was far from feeling. Speed was utterly essential. He must get in his point before the telephone rang. Yet he must not seem hurried or anxious. Shey was sure to recognize his voice but that couldn't be helped.

He folded his arm across his chest and leaned against the back bars. "I am perhaps overvalued by the Society of Thieves," he said shortly. "Be that as it may. Still, certain precautions have been taken against my capture and I must warn you that if I do not leave the palace safely within ten minutes the corpse of Madame Haze-Gaunt will be delivered to the chancellor tonight."

Shey frowned and studied his quarry thoughtfully. "That voice—Humm. You're lying, of course—just trying to gain time. Her excellency is still on the ballroom floor. Your shortened breathing, narrowed pupils, dry voice—all point to a deliberate lie. I won't even check on it. Now, will you hold out your arm, please, for a little shot of adrenalin?"

Wasn't the phone ever going to ring?

His continued calm exterior amazed him. "Very well," he murmured, thrusting out his arm. "We three die together." The needle jabbed in and struck a nerve. Alar's face twitched faintly. The attendants rolled the cage walls together, flattening the Thief spread-eagle fashion.

The odor of heating metal was strong behind him. His head was beginning to spin. Something was wrong. But for the bars crushing him he knew he would drop. Wet circles of sweat were spreading slowly from the armpits of his jacket.

Two burly attendants wheeled up the instrument chests. Alar forced himself to watch

them casually as they opened it and handed a strange-shaped pair of pliers to Shey.

A shudder of nausea crept up Alar's throat as he remembered his bloody nail-less hand-things from—that other time.

"Do you know," chuckled Shey as he fixed a coy eye on Alar, "I believe you're the chap that called on me a few nights ago."

The phone buzzed.

Shey looked up absently. "Answer that," he ordered dreamily.

Time ground slowly to a halt for the Thief. His chest was heaving in great gasps.

"It's from upstairs," called the attendant hesitantly. "They want to know if you've seen Madame Haze-Gaunt."

Shey waited a long time before answering. His look of introspection died away slowly. Finally he turned around and carefully replaced the nail pullers in the chest.

"Tell them no," he said, "and get the chancellor on the phone for me instantly."

Alar was deposited at the busy downtown intersection he demanded and, after an hour of careful wandering to elude possible I. P. tailers, he walked via alley and cellar to the door of a Society rendezvous. Before he slept, ate or even got a new blade he wanted to lay before the Council the incredible occurrences in the slave underground and in Shey's torture chamber.

Something sharp jabbed into his side. He raised his hands slowly to find himself surrounded by masked Thieves with drawn blades. The man wielding the nearest saber stated, "You are under arrest."

CHAPTER IX

Wild Talent

"YOU are now under a sentence of death," intoned the masked man on the dais. "In accordance with the laws of the Society the charges against you will be read, and you will then be given ten minutes to present your defense. At the end of that time, if you have failed to refute the charges against you beyond a reasonable doubt, you will be put to death with a rapier thrust through your heart. The clerk of this tribunal will read the charge."

Alar could not free his brain of a numbing dullness. He was too tired even to feel be-

wildered. Of all the Thieves here he recognized only Haven, whose stricken eyes peered out at him through a brown mask.

The masked clerk arose from a desk near the dais and read gravely. "Alar was captured by government operatives in the imperial palace approximately four hours ago, taken to the lower chambers and delivered into the custody of Shey."

"A few minutes later he was escorted unsheathed from the palace to the street and there released. In view of his unbroken skin it is presumed that the prisoner disclosed confidential information concerning the Society. The charge is treason, the sentence death."

"Fellow Thieves!" Haven sprang to his feet. "I object to this procedure. The burden of proof of betrayal ought to be on the Society. In the past Alar has risked his life for the Society many times. I now urge that we give him the benefit of the doubt. Let us presume him innocent until we have proved him guilty."

Alar studied the sea of masks confronting him. The judge listened to several men who bent toward him and whispered. Finally the judge straightened up. Alar's nails dug into the wooden rails. He knew he could prove nothing.

"Number eighty-nine," said the judge slowly, "has proposed a radical innovation in trial procedure. In the past, the Society has found it necessary to liquidate Thieves who have been unable to free themselves from suspicion. Trial boards of the society unanimously agree that by this method we destroy more innocent men than guilty."

"That price, I feel, is small, if it ensures the continuation of the Society as a whole. The question now is—are there any special circumstances that indicate the ends of the Society will best be served by a reversal of the burden of proof."

Alar listened to his pulse-rate mount slowly. One seventy-five . . . one eighty . . .

"There are unusual, even strange, circumstances in this case," continued the judge, leafing slowly through the brochure before him. "But all of them"—he transfixated Alar with steely eyes and hardening voice—"all of them indicate that we should redouble our care in dealing with this man, rather than lessen it."

"He is unable to account for his life prior to one night five years ago when, as an ostensible amnesiac, he found shelter with two members of this Society. And we must

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keep in mind that Chancellor Haze-Gaunt would be sufficiently ingenious to attempt to plant an agent provocateur among us by just such a ruse.

"When Alar emerged safely from the clutches of Shey we were entitled to suspect the worst. Does the defendant deny that he stands here among us with a whole skin when by rights he should be dead or dying?" The voice was faintly ironic.

"I neither deny nor affirm anything," replied Alar. "But before I begin a defense, I would like to ask a question. Since the sentence is death and I cannot leave this room alive perhaps the judge will be willing to tell me why the Society protected me when I was a helpless amnesiac and why, after permitting me to lead the dangerous life of a Thief, Dr. Haven and Dr. Corrips suddenly decided my life was more important than some twenty-odd brilliant minds in the M-Wing at the University? Without regard to what has—or has not—happened since, you must admit the stand is inconsistent?"

"Not necessarily," replied the judge coldly. "But you may form your own opinion. Five years ago a strange space ship crashed into the upper Ohio River. Certain flotsam was recovered from the wreckage that indicated it must have come from outer space. Two living things were recovered from it. One was a strange ape-like animal later captured by the River Police and given to Haze-Gaunt. The other was—you. We immediately got a note from Kennicot Muir concerning your disposition."

"But he's dead!" interjected Alar.

THE judge smiled grimly. "He is thought to be dead by the Imperial Government and by the world outside. As I say, we got a note from him to the effect that you were to be enrolled in the Society as soon as your emotional pattern was stabilized. You were to be given routine assignments involving but little physical danger, and you were to be studied.

"It was Muir's opinion that possibly you were a species of man of rather special properties—that your ancestral line had evolved beyond homo sapiens into something that could be of immense help to us in averting the impending Operations Finis that Haze-Gaunt may launch at any hour. Very early we discovered that your heart accelerates before you consciously detect danger.

"We know now that your subconscious

mind synthesizes impressions and stimuli of which your conscious mind is unaware, and prepares your body for the unseen peril, whatever it is. This was good but not good enough for us to place you beyond homo sapiens or to absolve you completely from suspicion as a planted spy.

"We waited for other manifestations of your possible ultra-humanity but nothing more was forthcoming. And after your probable treachery tonight your threat to the existence of the Society outweighs its desire to continue studying you."

So his earlier life would soon be sealed forever. Did no one know? He demanded, "Is Muir present now? Does he agree to my death?"

Muir is not present and as a matter of fact none of us has seen him in the flesh since his disappearance. But you can be sure he knows of this trial. So far he has not disagreed. Do you have any more questions? If not, the time for your defense must begin to run. You have ten minutes."

With pale face Alar studied his executioners. Many of them must have shared perilous adventures with him but would now kill him willingly to save the Society. His heartbeat was mounting steadily. Two hundred. It had never been so high.

"Any defense"—his coolness amazed him—"that I might bring forward would be so implausible and incredible from the point of view of most of you that it would be a waste of precious minutes to attempt any explanation whatever. If I have ten minutes to live—"

"Nine," corrected the clerk firmly.

"Then I intend to use them to save my life. John!"

"Yes, boy?" Haven's voice shook a little.

"John, if you believe that I am innocent, please explain this to me—what is the chemical basis of eyesight?"

The biologist looked startled but instantly recovered his poise. Blood began to flood back into his cheeks. "It is generally agreed," he declared, "that photons reflected from the thing being viewed enter the pupil of the eye and are focussed as they pass through the vitreous and aqueous humors to the retina, where an image is formed."

"There they impinge upon the visual purple, which then gives off a substance to which the retinal rods and cones are sensitive. The rods and cones pass the stimulus on to the retinal nerve endings, which gather finally

into the great optic nerve and register the image in the crevasses of the optic lobe at the base of the brain."

"Would you say that it is quite impossible for the reverse of that process to occur?"

"Reverse? You mean, where the brain conceives an image, passes it along the optic nerve to the retina, and the visual purple is so stimulated that it releases photons that are focussed by the eyes' refractive fluids to project an image? Do you mean to ask whether your eyes may be capable of projecting an image as well as receiving one? Is that what you mean?"

"Precisely. Is it impossible?"

The men strained forward in puzzled attention.

"You have three minutes," reminded the clerk sharply, looking from Alar to Haven and back again.

Haven fixed eyes wide with surmise on his protégé. "Visual projection has been predicted for the creature that may follow homo sapiens in the evolutionary scale. This power may evolve within the next fifty or a hundred millennia. But now, in modern man? Highly improbable.

"However"—he raised a warning hand in a gesture full of hidden meaning—"if someone were able to project light beams from his eyes—if he were able to do that he ought to be able to reverse other stimulus-response systems. For example, he should be able to turn the tympanum of the ear into a speech membrane, by activation of the cochlear nerves with the cerebral auditory tract. In a word, he should be able to reproduce aurally—not orally—any sound he can imagine!"

Alar stole a glance at the dim fluorescent tube in the ceiling fixture. A warm flush crept quickly up his throat. He knew now that he would live and not die—that he would live to unravel the gray net that enshrouded his past—that he would leave the Thieves and that he would henceforth search for himself in earnest. But there was much to be done yet, and he was far from being out of danger. He awakened to the voice of the judge:

"What did you hope to accomplish by that senseless discussion with Dr. Haven? Only thirty seconds of time remain for your defense."

Around him there was the eerie sliding of finely wrought steel on steel. All the Thieves except Haven had drawn their blades

and were watching him with feline intentness.

Alar stared upward at the ancient fluorescent light. He closed one eye and concentrated feverishly, trying to reawaken his wonderful power—the power that had subconsciously projected an image of his own body from his eye that time in the slave underground and had saved him then.

This time it might save him again, although in a different way. If he could only impinge enough photons of the proper quanta and frequency on the fluorescent coating of the lamp he believed he could fill in the troughs of the emitted photonwaves and throw the room into darkness.

The light seemed to flicker a little.

HIIS breath was like that of a panting dog and sweat was streaming into his open eye. A few feet in front of him a Thief raised his blade level with Alar's heart and sighted along it coolly.

Haven's nervous whisper rasped behind him. "Fluorescent light is higher on the spectrum. Raise your frequency a little."

The executioner lunged at him.

The room went dark.

Alar held his left hand over the nasty cut in his chest and slipped away a few feet. Not far—he had to stay in the open in order to control the lamp. Life now would depend on the boldest improvisation.

No one had moved. All around him came the accelerated expectant breathing of the men who wanted to kill him—as soon as they could distinguish his dark form from themselves.

Then—

His right ear heard sounds coming from his left ear:

"Let no one move! Alar must still be in the room. We'll find him as soon as we have a light. Number twenty-fourteen, go immediately to the outer office and obtain emergency lighting." It was a reasonable facsimile of the judge's voice. The danger was, did the judge think so too?

The man backed off quickly two paces and said in muffled tones, "Yes, sir."

How soon would it take some one to remember that Number twenty-fourteen was stationed down the corridor?

Again the tense silence as he edged backward towards the door. It was a fantastically difficult task to avoid cutting off his view of the lamp. He pushed fellow Thieves apolo-

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getically out of the way as he stumbled ever backwards. But one man need walk in front of his line of vision and his control of the lamp would vanish in a blaze of light. A dozen blades would cut him down.

He sensed the door now beside him, the guard in front of it.

"Who is it?" The guard's tense question shot from the dark, a bare foot away.

"Twenty-fourteen," Alar whispered quickly. He could feel warm blood trickling down his leg. He must find bandages soon.

A heated, sibilant argument was in progress somewhere in the room. He caught the word "twenty-fourteen" once,

"Your honor!" called someone nasally.

He listened to the guard hesitate in the very act of sliding back the bolts. His hoax would be exposed in seconds. "Hurry up!" he whispered impatiently.

"You have the floor!" called the judge to the nasal Thief.

The guard stood motionless, listening.

"If Alar escapes because of your delay," hissed Alar to him, "you'll be responsible."

But the man stood immobile.

Again that nasal voice from the other side of the room—"Your honor, some of us are of the understanding that Number twenty-fourteen is actually stationed at the far end of the exit corridor. If this is so your orders that he leave the room must have been answered by Alar!"

It was out.

"My orders?" came the astounded reply. "I gave no orders. I thought it was the sergeant of the guard! Door guard! Let no one whatever leave the room!"

The bolts clanged shut before him with grim finality. With a last despairing blast of metal effort Alar reactivated the damped fluorescent bulb with a shaft of dazzling blue light.

Pandemonium broke loose.

A split second later he had knocked down the blinded guard, drawn the bolts and was outside while a score of men groped inside. But their retinal over-stimulation would wear off quickly and he must hurry. He looked up the corridor. Number twenty-fourteen and his detail blocked that path. He knotted his fists, then turned to study the dead end of the corridor behind him—and his hand flew futilely to his empty scabbard.

Someone was standing there in the cul-de-sac.

"You can escape this way."

"Keiris!" he exclaimed softly.

"You'd best come quickly."

He was immediately beside her. "But how—?"

"No questions now." She pushed open a narrow panel in the wall, and they stepped behind it just as the trial room burst open. They listened to the muffled but grim voices from beyond the panel.

"Don't underestimate them," whispered the woman, pulling him up the dark passage by the hand. "They'll question the guard up the corridor, then scour this end. They'll find the panel within sixty seconds."

Soon they were in a dim-lit alley at the first street level.

"What now?" he panted.

"My coupé is over there."

"So?"

SHE stopped and looked up at him gravely. "You are free for a little while, my friend, but your reason must tell you that you can expect to be caught within a matter of hours. The I.P.'s are combing the city for you, block by block, house by house, room by room.

"All roads from the city are closed. All non-police aircraft are grounded. And the Thieves are looking for you too. Their methods will be less gross but even more efficient. If you try to escape without a plan or without assistance the Thieves will certainly recapture you."

"I'm with you," he said shortly, taking her arm. They got into the coupé silently.

The gloomy alleyway began to race by them as the atom-powered rotors gathered speed.

"You'll find antibiotics and astringents in the first-aid kit," said the woman coolly. "You'll have to dress your wound yourself. Please do it quickly."

He ripped off his coat, shirt and underwear with blood-slippery fingers. The antibiotic powder stung and the astringent brought tears to his eyes. He slapped adhesive gauze over the wound.

"You'll find more clothes in the bundle beside you."

He felt too weak to bring up the question of propriety.

He unwrapped the bundle.

"You are in the process of assuming the identity of one Dr. Philip Ames, Astrophysicist," Keiris informed him.

Alar zipped up his new shirt in silence and

loosened his belt preparatory to changing trousers.

"Actually," continued the woman tersely, "Ames doesn't exist except in certain Government transcripts. The wallet in your inside coat pocket contains your new personal papers, a ticket for the next lunar flight and your sealed orders from the Imperial Astrophysics Laboratory, countersigned by Haze-Gaunt."

There was some tremendous fact staring at him that he couldn't quite grasp. If only he weren't so tired. "I assume," he said slowly, "that the Imperial Laboratory knows that Haze-Gaunt is sending a man to Lunar, but doesn't know who is being sent. Otherwise, I would be exposed immediately as an impostor.

"I must assume, too, that Haze-Gaunt, if he has thought about it at all, believes he is sending an Imperial Astrophysicist whose identity is known only to him. Such double deception must have been planned and executed by a third person."

Now he had it!

And he was just as much in the dark as ever. He turned to the woman accusingly. "Only one intellect could have calculated the probability of my escape from Shey and where my trial by the Society would be held. Only one man could have controlled Haze-Gaunt's course of action in selecting 'Ames'—The Microfilm Mind!"

"It was he."

Alar took a deep breath. "But why should he try to save the life of a Thief?"

"I'm not sure but I think it's because he wants you to discover something vital at Lunar. Something in a fragment of sky map. It's all in your orders. Besides, the Mind is a secret Thief sympathizer."

"I don't understand."

"Nor I. We weren't supposed to."

Alar felt completely lost, out of his depth. A few minutes before the world consisted neatly of Thieves and Imperials. Now he felt vividly the impact of a brain that treated both factions as children—an inconceivably deep brain that labored with infinite skill and patience toward—what?

"That's Lunar Terminus ahead," said his companion. "Your luggage has already been checked aboard. They'll examine your visa carefully but I don't think there'll be any trouble. If you want to change your mind this is your last chance."

Haze-Gaunt and the Imperial Laboratory

would eventually get together and compare notes. A brief vision of being cornered by hard-bitten I.P.'s in the tiny Lunar Observatory settlement flashed into Alar's mind and his saber hand twitched uneasily.

And yet—just what was on the star plate? And why had the Microfilm Mind picked him to discover it? Could it throw any light on his identity?

Of course he would go!

"Goodbye, then, Keiris," he said gently. "Incidentally there's something I ought to warn you about. It's known at the chancellory that you're missing right now. Don't ask me how I know. I just do. It will be very dangerous for you to return. Can't you come with me?"

She shook her head. "Not yet—not yet."

CHAPTER X

The Questioning

AS she hurried up the secret stairway to her chancellory apartment, Keiris' calm exterior belied the tumult with her—the same tumult that had been raging the moment Alar's lithe form had dropped over her window sill earlier in the evening. The armor that she had carefully built up around her after Kim had vanished (was he really dead?) had fallen about her in ruins.

Why should an unknown Thief affect her this way?

His unmasked face had provided no clue. That was disappointing, because she never forgot a face. And yet her first glimpse of that rather broad soft face with the incongruously hard dark eyes, instead of dismissing the problem as nonexistent, had accentuated it.

She knew that she had never seen that face before. She also knew that he was utterly familiar—as much a part of her as the clothes she wore. Was that disloyal to Kim? It depended on how she meant it.

As she stood before the panel opening into her bathroom, she found herself blushing.

She shrugged her shoulders. No time now for analysis of personal feelings. Haze-Gaunt would be waiting for her in her bedroom, wondering where she'd been. Thank heaven for his fantastic jealousy. He'd only half-believe her anyway but it provided a queer sort

of security for her—a status quo consistently defined by its very insecurity.

She sighed and started sliding the panel back.

At least she'd have time to take a shower and have her women rub her down with rose petals. That would give her more time to invent answers for the questions that Haze-Gaunt would certainly ask. And then she'd squeeze into that low-necked—

"Have a pleasant outing?" asked Haze-Gaunt.

She would have screamed if her tongue hadn't stuck to the roof of her mouth. But she gave no exterior sign of shock. She got a full deep breath into her lungs and it was over.

She looked at the three intruders with outward calm. Haze-Gaunt was staring at her in gloomy uncertainty, legs spread, hands locked behind his back. Shey was beaming in happy anticipation. The deep lines in General Thurmond's face were, on the whole, noncommittal. Possibly the parentheses enclosing his small dash of a mouth looked a little harder, a little crueler.

The woman's heart beat faster. For the first time since Haze-Gaunt had placed her in his quarters she felt a thrill of physical fear. Her mind simply refused to accept the implications of Haze-Gaunt accompanied by the two most merciless monsters in the Imperium.

She had planned her most plausible line of defense even as Haze-Gaunt's question left his lips. Smiling wryly, she closed the panel behind her. "Yes, I had a pleasant outing, Bern. I go out whenever I can. Slaves have the vices of slaves, don't they?"

"We'll come back to that," rejoined the chancellor grimly. "The main question is, what do you know about Alar? How did you meet? Why did you let him escort you to the ball instead of turning him over to the palace guards?"

"Bern," she said, "is my bathroom the place for an inquisition? And it's really rather late. Perhaps in the morning."

She could have bitten off her tongue. This defense was not ringing true. She could sense the little psychologist anticipating her every word—knowing almost exactly what she would say next. Perhaps the diabolical little man had even forewarned Haze-Gaunt of what she could be expected to say if she were hiding something from them.

"Oh, very well," she said wearily, stepping

away from the wall. "I'll tell you what I know, though I can't see why it's so important. Alar climbed up on my balcony this evening. I threw a knife at him but I wasn't a very good shot. I missed and in the next instant he had me by the wrist.

"He said he'd kill me if I didn't take him into the ballroom. What could I do? My maids were gone. It's really your fault, Bern, for not providing at least a minimum of protection for me."

She knew it was no good but at least they'd take a few moments to pick it to pieces. Meanwhile she would be thinking. She walked casually to the wash basin, as though she had made her final contribution to the discussion, and studied her face in the mirrors a few seconds. She was spraying her face with a perfumed water-palm oil emulsion when Haze-Gaunt spoke again.

"Your friend seems to have taken a shower in here and borrowed some of my clothes—not to mention the Italian saber. Were you bound and gagged during all that?"

KEIRIS stopped rubbing her oiled face and reached languidly for the water-alcohol spray knob. "It has always been my understanding that my apartment was wired with concealed microphones. I assumed that every word that passed between the Thief and myself would be heard by the guards and that Alar would be captured in this very room."

"By a remarkable coincidence," Thurmond murmured, "your knife severed the wire."

The water-alcohol spray stung her cheeks sharply. She rubbed her face briskly with a deep-napped towel, then faced the three again with a shell of poise that was growing thinner by the minute.

Shey was still smiling. Once he seemed almost to chuckle.

"I'll give you the benefit of the doubt on that," said Haze-Gaunt coldly. He unlaced his fingers from the small of his back and folded his arms on his chest as she sauntered toward them. "And I'll even assume, for the time being, that the next phase of your story is true—that you believed we knew all along that the Thief at the ball was Alar, and that we were biding our own good time in taking him. We'll let that go."

"You may or may not know that after his capture Alar was given to Shey for examination and that Alar somehow knew that

you were missing from the palace grounds an hour ago, just before Shey was to have begun his experiments. Alar obtained his release by telling Shey that you were being held as a hostage by the Thieves. You must have told him that you would be missing at that moment, and that he could use the knowledge to effect his release. Do you deny that?"

Keiris hesitated and looked at Shey for the first time. The pain-dabbler was eyeing her in rapt anticipation. She knew that her face must be very pale. For nearly a decade she had thought she could face death with calm. But now that the probability was crystallizing before her very eyes it became horrible.

What was it about death that frightened her? Not death itself. Only the hour of dying—the hour that Shey knew how to prolong indefinitely. And she would talk. She knew that Shey could make her talk. She would have to tell about the Microfilm Mind and a potent weapon would be lost for Kim's Thieves.

Somewhere, somehow, Kim might still be alive. What would he think when he learned of her betrayal? And incidentally, just how had Alar known that she had been waiting for him at the Thief rendezvous during his brief imprisonment in Shey's chambers? There were too many questions, and no answers.

She wondered just how much pain she could take before she became talkative.

"I deny nothing," she said finally. "If you want to think that I provided the Thief with the means for his escape you may certainly do so. Does my background lead you to expect an overwhelming loyalty to you, Bern?" She watched his face closely.

Haze-Gaunt was silent. Thurmond shifted his feet restlessly and glanced at his wrist radio.

"Haze-Gaunt," he clipped, "do you realize we're letting this woman hold up Operation Finis? Every second is vital if we are to achieve surprise but we can do nothing until we evaluate Alar. I urge that you turn her over to Shey immediately. Her actions show something more than a generalized sympathy with a subversive organization that she identifies with her late husband."

"There was something special between her and Alar. We must pull it out of her. And what about these incessant leaks of high secrets to the Thieves? You always thought you knew every move she made, every word she said. Where," he concluded tersely, "has she been for the last hour?"

"I have been with Alar." She found it incredible that her voice could be so calm. But she was right in the effect of the statement on Haze-Gaunt. The barest flicker of anguish passed over his eternally immobile mouth.

She giggled and spoke for the first time. "Your answers are so clear that they completely obscure—what? You point with sweeping gestures to a wide-open highway but it is the camouflaged path that we seek."

"Why are you so eager to imply that you have been activated all along by a simple emotional attachment for a man—even if he is a gallant swashbuckling Thief—whom you never saw before? I ask this, not because I expect answers here and now but so that you will understand the necessity, from our point of view, for what must follow."

Keiris finally knew the shape of physical despair. It was a leaden numbing thing that

[Turn page]

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seized one nerve after the other and made her rotten with fear.

"What do you—they—want to know, Bern," she said. It was not a question but rather an admission of defeat. Her voice sounded oddly plaintive in her ears.

HAZE-GAUNT nodded to Shey, who stepped up and swiftly strapped a disc-like thing to her arm—a portable verigraph. The needles that circulated veinous blood through the instrument stung sharply, then the pain was gone. The thing's eye blinked green at each heart beat. She rubbed her arm above the instrument.

It would soon be all over. They could get answers out of her painlessly. In a way, she was glad. It had been too long without Kim.

Haze-Gaunt waited a moment for the scopolamine to take effect. Then he asked, "Had you ever known Alar before tonight?"

"No," she replied with what she believed perfect truth.

To her utter amazement and wondering surmise, the blinking green eye of the instrument turned slowly red.

"You have seen him before," observed Haze-Gaunt grimly. "You should know better than to try to deceive the verigraph on the first question. You know well enough that it is effective over a three-minute period."

She sat down dizzily. The instrument had said she had lied—had said that she really had known Alar before. But where? When?

"Perhaps a glimpse somewhere," she murmured faintly. "I can't account for it otherwise."

"Have you carried information to the Thieves before?"

"I don't know." The light flashed a vivid yellow.

"She isn't sure," interpreted Shey smoothly, "but she thinks she has occasionally betrayed information in the past, evidently through anonymous intermediaries, and she believes it reached the Thieves. We have only two minutes before the 'graph becomes ineffective. Let's hurry on."

"In these matters," Thurmond asked her harshly, "do you act independently?"

"Yes," she whispered.

The light immediately flashed red.

"A categorical lie," sniggered Shey. "She's working for someone. Who directs you?" he demanded.

"No one."

Again the red light.

"Is it a cabinet member?" demanded Thurmond.

Even in her near-stupor she marveled at his eternal suspicion of treachery in high places.

"No," she whispered.

"But someone in the palace?"

"The palace?"

"Yes, here in the chancellory palace?"

The light was blinking green steadily. She groaned with relief. The Microfilm Mind was quartered within the imperial palace.

"The imperial palace, then?" suggested Shey.

She didn't answer but knew the light was burning crimson.

The three men exchanged glances.

"The imperatrix?" asked Thurmond.

The light turned green. The police minister shrugged his shoulders.

She realized dully that she must faint but that she could not.

And it came. Haze-Gaunt displayed once again the flash of dazzling intuition that had brought him to the leadership of his wolf pack. He asked:

"Do you receive orders from the Microfilm Mind?"

"No."

It was no use. She knew without looking at the light that it must surely have betrayed her.

Oddly she felt only relief. They had got it out of her without pain. She couldn't blame herself.

Then, "Barbellion?" asked Thurmond dubiously, naming the Colonel of the Imperial Guards.

She froze. The three minutes had passed. The verigraph was no longer registering. The light had not turned red on the name "The Microfilm Mind."

"We've run over the time a little," interposed Haze-Gaunt, frowning. "Her blood is buffered again, and her reactions for the last questions were meaningless. We'll have to wait six or seven days for another try at the truth."

"We can't wait," objected Thurmond. "You know we can't wait."

She stepped up and disconnected the verigraph. Star felt the stab of another needle and her head was horribly clear again by the time she realized what Haze-Gaunt had replied.

"She's yours, Shey."

CHAPTER XI

Return of Keiris

"**D**EAR, dear Keiris," smiled Shey. "Our rendezvous here was as inevitable as death itself."

From where she lay, strapped to the operating table, the woman sucked in her breath and looked with wide eyes about the room. There was nothing there but the gleaming whiteness, the pans of strange instruments—and Shey, swathed in a white surgical gown.

The psychologist was speaking again, his words interspersed with giggles.

"Do you understand the nature of pain?" he asked, leaning over her as far as his rotundity would permit. "Did you know that pain is the finest of the senses? So few people do. In the gross animality of most of mankind pain is used solely as a notice of physical injury.

"The subtler overtones are missed entirely. Only a few of the enlightened—such as the Hindu fakirs, the Penitentes, the Flagellants—appreciate the supreme pleasures that may be obtained from our sadly neglected proprioceptive system.

"Look!" He pulled back his sleeve deftly, exposed a pulpy raw spot on his inner arm. "I peeled off the epidermis and let flaming drops of ethanol fall there for fifteen minutes, while I sat in my box at the opera, enthralled by the Imperial Ballet's rendition of *Inferno*. In the whole audience I alone completely appreciated it." He paused and sighed. "Well then, let us begin. You can talk anytime you wish. I hope not too soon."

He wheeled up a dial-clustered box and unreeled two needle-tipped wires from it. One needle he jabbed into the palm of her right hand, strapped it down to the palm with adhesive tape. The other was similarly applied to her right bicep.

"We start with the elementary, and advance to the complex," explained Shey. "You will appreciate the stimuli more fully if you understand their effect. Observe the oscillograph." He pointed to a circular glass panel of dull white, split horizontally by a luminous line.

She cried out involuntarily as a sharp pain shot up her arm—and stayed there, throbbing rhythmically.

Shey giggled. "Nice appetizer, eh? See the cathode beam? It shows that impulses travel up that particular nerve trunk in several speeds. There's the sudden flashing pain—the peak on the cathode tube, traveling about thirty meters a second. Then several slower impulses come up, with speeds down to half a meter a second. They make up the dull ache that follows stabbing your toe, or burning your finger.

"These impulses are gathered into larger and larger nerve fibers, that eventually pass into the spinal cord and are carried to the thalamus, which sorts out the various stimuli of pain, cold, warmth, touch, and so on, and routes the messages to the cerebrum for action.

"The post central convolution lying just behind the fissure of Rolando seems to get all the pain impulses." He looked up cheerfully and adjusted the needle in her upper arm. "Bored with that monotonous old stimulus? Here's another."

She braced herself but the pain was not nearly so sharp.

"Not much, eh?" said the psychologist. "Just barely above threshold. After stimulation the fiber can't be stimulated again for four-tenths of a millisecond. Then for fifteen milliseconds it goes the other way—hypersensitive—and then it's subnormal again for eighty milliseconds, then normal from then on. It's that fifteen millisecond hypersensitive period that I find so useful—"

Keiris screamed.

"Splendid!" crowed Shey, shutting off the switch on the black box. "And that was on only one nerve in one arm. It's perfectly fascinating to add one pair of electrodes after another until the arms are covered with them, even though the subject generally dies." He turned to the box again.

Somewhere in the room a radiochron was ticking out the seconds with mocking languor.

* * * * *

Alar stared in slow wonder at the bearded starveling in the mirror.

What hour?

What day?

A sharp glance at the chronocal told his incredulous eyes that six weeks had passed since he had locked himself in the study here beneath Lunar Station in a frantic race against the moment when the combined might of the Thieves and the Imperials would search him out and kill him.

Had he really succeeded in solving the mystery of the star plate?

He didn't know.

He thought he had discovered the identity of that luminous wheel in the lower right hand corner of the negative. He had discovered some very interesting aberrations in the nebulae in the intervening space and had considered several explanations, none of which were entirely satisfactory. He wondered if the Mind knew the answer. He rather suspected he did.

EVERYONE seemed to know all the answers but himself. There was almost a comical injustice in that he, the possessor of the miraculous ear and eye, who had skirted the fringe of godhood that night in Shey's evil chamber, knew so little of himself.

And now this strange and wonderful star plate—it held something that the Mind wanted him to know. But what?

He scratched absently at his beard while his eyes toured the study. From the ceiling lamp dangled a small three-dimensional model of the galaxy. It seemed to apologize for the preposterous scenery beneath, which consisted of—books, gigantic, minuscule, gaudy, modest, in all the tongues of distant earth.

They swarmed over floor, chairs and tables, halfway up the four walls, a rugged landscape drained here and there by valleys made by Alar as he walked the floor during the past weeks. The valleys were carpeted by a forlorn detritus of discarded scribblings.

In a glaciated cirque of the book-Matterhorn that arched over his work-desk his microscope was enshrined, surrounded by a gray talus of negatives.

His roving eye next caught the glint of the tube of depilatory peeking at him from between the pages of Muir's *Space Mechanics*. A moment later he was again before the mirror, rubbing his beard away by degrees, followed by curious inspection, as men invariably do when they depilate after a long absence from civilization.

But when the stubble was all gone he was appalled at the pinched pallor of his face. He tried to remember when he had last slept or eaten. He couldn't place either event precisely. He vaguely recalled devouring frozen cubes of vegetable soup with his bare fingers.

He walked to the porthole and looked out into the blackness toward a ridge of wild lunar mountains, silver-tinged by the setting

sun. Crescent Terra hung in gigantic splendor just above the ridge. He would like to be there now, asking questions of the Mind, of Haven—of Keiris. How long would it be before Earth would again be safe for him? Probably never, with both Thief and Imperial searching. It was a miracle that his imposture here at the observatory had not been detected.

He shook his head gloomily. What he needed was a brisk walk along the sparse streets of Selena—the lunar settlement that housed the observatory staff and their families. He strode toward his shower room.

Alar had been wandering through the streets about an hour when he saw Keiris.

She was standing alone on the steps of the Geographical Museum regarding him gravely. A light cape was thrown about her shoulders and she appeared to hold it together with the fingers of her right hand, or possibly a barely visible metal clasp.

The lamps on the museum porticos threw an unearthly blue light over her bloodless face. Her translucent cheeks were drawn and lined and her body seemed very thin. There was now a streak of white in her hair, which was knotted unobtrusively at the side of her neck.

To Alar she was completely lovely. For a long time he could only stare, drinking in the moody, ethereal beauty of the composition of light and blue shadow. His torturing frustration was forgotten.

"Keiris!" he whispered. "*Keiris!*"

He walked quickly across the street and she descended the steps stiffly to meet him.

But when he held out both hands to her, she merely lowered her head and seemed to swirl her cape closer. Somehow, he had not expected so cool a reception. They walked silently up the street.

After a moment he asked, "Did Haze-Gaunt give you any trouble?"

"A little. They asked some questions. I told them nothing." Her voice was strangely husky.

"Your hair—have you been ill?"

"I have been in a hospital for the past six weeks," she replied evasively.

"I'm sorry." After a moment he asked, "Why are you here?"

"A friend of yours brought me. A Dr. Haven. He's waiting in your study, now."

Alar's heart leapt. "Has the Society reinstated me?" he asked quickly.

"Not that I know of."

He sighed. "Very well, then. But how did you meet John?"

Keiris studied the dim-lit flaggings of the street. "He bought me in the slave market," she said quietly.

Alar sensed the outline of something ominous. What could have angered Haze-Gaunt to the point of selling her? And why had the Society bought her? He couldn't talk to her about it. Perhaps Haven would know.

"There's really nothing mysterious about it," she continued. "Haze-Gaunt gave me to Shey. When Shey thought I was dead he had me sold to what he thought was a charnel-house buyer, only it turned out to be a surgeon sent by the Thieves. They kept me in their secret hospital for six weeks and as you can see I didn't die. And when Dr. Haven came I told him where you were. We slipped through the blockade last night."

"Blockade?"

"Haze-Gaunt grounded every planetary and space-jet immediately after you left. The Imperials are still combing the hemisphere for you."

HE STOLE a cautious look behind them. "But how could a Thief ship enter Lunar Station? The place is swarming with I.P.'s. You've been spotted, surely. It was insane of Haven to come. The only reason both of you weren't arrested when you landed was that the I.P.'s hoped you'd lead them to me. Well, we're being tailed right now."

"I know but it doesn't matter." Her voice was quiet, with a soft huskiness. "The Mind told me to come to you. As for Dr. Haven, I question none of his acts. As for yourself, you'll be safe for several hours.

"Suppose the guards at the landing locker *did* identify Dr. Haven and myself and suppose that I *have* called their attention to you and suppose we *are* being followed. If we don't try to leave Selena they won't do anything, at least not until Thurmond arrives and perhaps Shey. Why should they? They think you can't escape."

He started to make a sarcastic retort, then changed his mind. "Does Haven really think he can get me off from here?" he queried.

"A high government official, a secret Thief, will plant his bribed guard at the exit port at a certain hour and all of us can escape then." She compressed her lips, gave him a strange side look, and then said without expression: "You won't die on the moon."

"Another prediction of the Microfilm

Mind, eh? Incidentally, Keiris, who is the Mind? Why do you think you have to do everything he says?"

"I don't know who he is. It's said he was once a common nightclub performer who could answer any question if the answer had ever appeared in print. Then about ten years ago he was in a fire that left his face and hands disfigured.

"After that he couldn't make any more nightclub appearances, and became a library clerk in the microfilm room of the Imperial Science library. That's where he learned to absorb a two-thousand page book in less than a minute and that's where Shey discovered him."

"Go on." He felt a twinge of guilt at pressing her for details about a life she must long to forget. But he had to know.

"About that time Kim disappeared and Haze-Gaunt—took me. I got a note in Kim's handwriting asking me to do whatever the Mind requested. So—"

"Kim?" Something sagged within the Thief.

The woman said quietly: "Kennicot Muir was my husband. You didn't know?"

A great deal was suddenly incisively, painfully clear.

"Keiris Muir," he muttered. "Of course! The wife of the most fabulous, most elusive man in the system. In ten years he hasn't appeared in person to the Society he founded or to the woman he married." He said abruptly, "What makes you think he's alive?"

"Sometimes I wonder myself," she admitted slowly. "It's just that on *that* night, when he left me to go to his fatal interview with Haze-Gaunt, he told me he'd get through and come back for me. A week later, when Haze-Gaunt had installed me in his personal quarters, I received a note in Kim's handwriting asking me not to commit suicide. So I didn't."

"The next month I got another note telling me about the Microfilm Mind. About once a year since then there have been other notes in what look like his handwriting, telling me that he looks forward to the day we can be together again."

"Perhaps they are forgeries. He may be dead. Perhaps I am naive for thinking him alive. On the other hand, none of the wolf pack think he's dead. Haze-Gaunt is almost certain he is in hiding, perhaps overseas."

"But what about the Microfilm Mind? What is his connection with the Society?"

"A secret agent, I suppose. His access to the Imperial Science library is probably of considerable value to the Society."

Alar smiled humorlessly. Keiris' intimacy with greatness had apparently blinded her to the probability that the Society was a mere cat's paw of the Mind. He looked at the luminous dial on his wrist radio.

"It's four now. If Thurmond left immediately—and we must assume he did—he'll be here with troops by midnight. We have eight hours to complete the solution to the star plate and to blast off. Our first stop is the Galactarium, then back to my study and John Haven."

CHAPTER XII

Search for Identity

THE wizened curator unlocked the door, and Alar led the woman into the great dark chamber of the Galactarium. The door closed quietly behind them, and their eyes strained forward in the cold gloom, sensing rather than seeing the vastness of the place.

"A gallery circles the interior," whispered Alar. "We'll take a moving platform to the necessary point."

He led her down the ramp and they were soon speeding around the dark periphery of the great room.

Within a few seconds the platform slowed to a stop in front of a vaguely lit control-board. Keiris smothered a gasp as Alar's hand flew to his saber pommel.

A tall somber figure stood by the panel station. "Good evening, Mrs. Muir, Alar!"

The Thief felt his stomach turn over slowly.

The tall man's laughter welled in ghastly echoes out into the blackness, circling and sodden. His face was that of Gaines, Undersecretary of Spaceways. The voice was that of the Thief judge who had condemned him to death.

Alar was silent, wary, speculative.

The man seemed to read his thoughts. "Paradoxically, Alar, your escape from us was the only thing that could have reinstated you in the Society. It confirmed your ultrahumanity no amount of words could have done. As for me, if you're wondering, I arrived on the sun-bound *Phobos* last night,

and I am here now to provide for your safe passage home and to ask if you have discovered the secret of the star plate. Our time is growing very short."

"Why do you want to know?" queried Alar.

"I don't particularly. The important thing is that you know."

"That's easily answered, then. I don't know—or at least I don't know the whole story."

Alar had a stubborn impulse to maintain a strict silence until he learned more about his role in this fantastic drama. Still, for ill-defined reasons, he trusted this man who had once wanted his life.

"Look out there," he said simply, pointing into the man-made space before them.

The three of them stared into the silent vastness while Alar flicked a switch on the panel. Even Gaines seemed subdued.

Sol with his ten planets sprang into glowing three-dimensional view before them. Cerberus, the newly discovered trans-Plutonian planet, was nearly a mile away, barely visible. Expertly the Thief manipulated the dials and the system began rapidly to shrink. The three picked up opera glasses from the panel pockets and watched. Finally Alar spoke.

"Our sun is now about the size of a very small speck of luminous dust, and even with our magnifiers we can't see Jupiter." He quickly began to activate more switches. "That's Alpha Centauri, a visual binary, over two hundred yards away from the sun on the present scale. The bright one on the other side is Sirius. And there's Procyon. They're accompanied by dwarfs too faint to see."

"Within this mile-diameter Galactarium there are now about eighty of the stars nearest the sun. On this scale the galaxy would fit in a space about as big as the moon. So we'll have to shrink the projections still more to see any substantial part of the galaxy."

He turned more dials and a great glowing wheel with spiraling spokes began to form before them. "The galaxy—our local universe," he said softly. "Or at least ninety-five percent of it, scaled down to a mile across and one-tenth of a mile thick. It's just a haze of light now—the Milky Way."

"The main identifying features are the two Magellanic Clouds. For more accurate identification we can refer to the positions of the spiral arms, the hundred globular clusters and the configuration of the star cloud in the

center of the galaxy. Now watch."

The wheel and its Magellanic satellites shrank quickly. "The Galactarium is now on a diametric scale of five million light years. Far off to the right, about seven hundred and fifty thousand scale light years away, is our sister galaxy, M thirty-one in Andromeda, with her own satellite clusters M thirty-two and NGC two hundred and five. Below are two smaller galaxies, IC one thousand six hundred and thirteen and M thirty-three. On the other side is NGC six thousand eight hundred and twenty-two. The universe-fragment you now see," he concluded simply, "is exactly what I found on the star plate."

"But this is old stuff," protested Gaines in heavy disappointment.

"No," interjected Keiris. "Alar means that he has seen our own galaxy *from outside*."

"That's right," said the Thief. "For two centuries astronomic theory has predicted that our own galaxy would be visible as soon as a telescope were constructed capable of penetrating the seven-billion-light-year diameter of the universe. When the Lunar Observatory was finished it was just a question of time before my discovery was made. So my contribution in *that* direction is largely routine."

"Have you discovered something else, then?" asked Keiris.

"Yes. In the first place, light from the Milky Way, passing in a closed circuit across the universe, should return only after seven billion years, so that what we now see on the plate should be our galaxy as of seven billion years ago, on the very eve of its formation from cosmic dust. Instead, the plate shows the Milky Way as of now—today—just as you see it out there."

"But that's impossible!" exclaimed Gaines. "There ought to be a seven-billion-year lag!"

SMILING, the Thief said, "It should be impossible, shouldn't it? But the positions of the galactic spiral arms, the peripheral velocity of the nebula as a whole, the positions of the globular clusters, the spectral age of our own sun, even the positions of the planets, including Terra, prove otherwise."

"Then how do you explain it?" asked Keiris.

"Here is my hypothesis: According to Einstein, time multiplied by the square root of minus one is equated to Euclidean space. That is, a light year of distance equals a year

of time multiplied by the square root of minus one. So if space is finite, so must time be. And, like space, time curves and bends back on itself, so that there is no beginning and no end."

"Now our galaxy moves simultaneously along time and space coördinates like this." He held up two pencils crossed at right angles. "Let the x-axis be time, the y-axis space, our galaxy located at the intersection. Now I move the y-pencil to the right, and simultaneously push it up. Anything at the intersection will be moving in both coördinates."

"Or suppose you substituted two hoops for the pencils, so that the hoop frames intersect each other at right angles like the frame of a toy gyroscope. Let one hoop be equivalent to seven billion light years of space and the other equivalent to seven billion years of time, with our galaxy always at their intersection."

"I'll assume further that for any given time-space intersection there can be but one distribution of matter, with the corollary that, when the same intersection recurs, the same matter will be there. So, after the hoops have made one-half revolution, the intersection does recur, and it follows that our galaxy is in two places at once, or to be more precise, in the same space at the same time."

"But space and time have vanished and rematerialized across the poles of the universe and, when they did, our galaxy materialized with them. The joker in my illustration is that we are tempted to view the rotation of the hoops in Euclidean space, while they're really associated only through the square root of minus one via the fourth dimension. Only their intersections—just two geometric points—have mutual Euclidean values."

"And, since the two intersections are diametrically opposite in the space-time cycle, one should always be seven billion years ahead of the other, so that when light starts from the 'future' intersection and travels across the poles of time and space to the lagging intersection, it arrives at the other seven billion years later, to be received by the same space-time-matter continuum from which it originated. That's why the 'mirror' galaxy was the same age as ours now is, when its light began that long journey."

The three were silent a moment. Finally Gaines said, almost diffidently, "What do you think it means, Alar?"

STARTLING STORIES

"Standing by itself, it means nothing. But viewed in the light of another peculiarity appearing on the plate it might mean a great deal. We can talk about it after I've seen John Haven and asked him some questions."

* * * * *

"I'll try to answer your last question first, my boy," said the biologist. He studied his protégé warmly as he lit his pipe and took a few experimental puffs. Finally he settled back in his chair. "Do you know what 'ecstasy' means?"

Keiris and Gaines were following avidly.

"You may assume that I know the dictionary definition, John," answered Alar, absorbing the older man with keen eyes.

"That isn't enough. Oh, it tells you it's from the Greek verb 'existani,' meaning 'to put out of place.' But out of place from what? Into what? What is this peculiar mental state known as 'ecstasy'? All we know is, that it may be attained through alcohol, drugs, savage dancing, music, and in various other ways.

"During your encounter with Shey, in your moment of greatest need, you probably passed into—or beyond—the state we are discussing. In so doing you burst from your old three-dimensional shell and found yourself in what was apparently a new world.

"Actually, if I have followed your description accurately, it was simply an aspect of your eternal four-dimensional body, which has three linear dimensions and one 'time' dimension. The ordinary human being sees only three dimensions—the fourth, time, he senses intuitively as an extra dimension.

"But when he tries to imagine the shape of a thing extending through the time dimension, he finds that he has simply lost a space dimension. He imagines his body extending through time just as your body did during your experience. In this new world the three dimensions visible to you were two linear and one of time, which combined to give an appearance of regular three-dimensional solidity."

"You are saying," said Alar slowly and thoughtfully, "that I viewed my four-dimensional body through three new dimensions."

"Not three *new* dimensions. They were all old. Height and breadth were the same. The only apparently new dimension was time, substituting for depth. The cross section of your body simply extended with changing time until it became an endless pillar.

"And you stepped out of your pillar when the pain became unbearable. The difference in your ecstasy and that of the Greeks was that you didn't have to go back into time at the same moment—or place—that you left."

"John," said Alar with gloomy, almost exasperated surmise, "do you realize that I could have stepped back into time at a period prior to my amnesia? That I could have solved my personal mystery with utter ease? And now—I don't know how to get back, except perhaps through that unutterable hell of pain." His chest lifted in vast regret. "Well, then, John? About my other question—who am I?"

HAVEN looked toward Gaines.

"I think I'd better try to answer that one," interposed the Undersecretary. "But there isn't any answer, really. When you crawled up on the river bank five years ago, you were clutching something in your hand—this." He gave Alar a small leather-bound book.

The Thief studied it curiously. It was water-stained, and the cover and pages had shriveled and warped during drying. The cover was stamped in gold:

T-22, Log.

He was breathing considerably faster when he sought Gaines' eyes. But the Undersecretary simply said, "Look inside."

Alar folded back the cover and read the first entry:

"July 21, 2177 . . ."

His eyes narrowed. "That's next week. There's an error in the date."

"Finish the entry," urged Haven.

"July 21, 2177. This will be my only statement, since I know where I am going and when I shall return. There is little now to be said and, as perhaps the last living human being, I have no inclination to say it. Within a few minutes the T-22 will be traveling faster than light. Under more cheerful circumstances I should be exceedingly interested in following the incredible evolution that has already started in my companion."

That was all.

"The rest of the book is blank," said Haven shortly.

Alar ran nerveless fingers through his hair. "Are you saying that I'm the man

who wrote that? That I was on the ship?"

"You may or may not have been on the ship. But we are certain you didn't make the log entry."

"Who did?"

"Kennicot Muir," said Gaines. "His handwriting is unmistakable."

CHAPTER XIII

Visitor from the Stars

ALAR'S eyes opened a trifle wider and fastened hawklike on the Space Under-secretary. "How," he asked, "can you be so sure I'm not Kennicot Muir?"

"He was a larger man. Furthermore, the fingerprints, eye capillaries, pupil chroma, blood type, age and dental and skeletal characteristics are different. We've considered the point very carefully, hoping to find points of identity. There aren't any. Whoever you are you're not Kennicot Muir."

During this time Keiris had not taken her eyes from Alar's face.

The Thief sighed. "Well, then, that's that. But what about the date of the entry? July twenty-first, two thousand one hundred and seventy-seven is only a few days off. Since the book is at least five years old Muir must have made a blunder in the date."

"We don't know the answer," admitted Gaines. "We thought you might."

The Thief smiled humorlessly. He said: "How could Muir return in the *T-twenty-two* before it was even built?"

The room slowly grew quiet. Nothing was audible except Keiris' suppressed jerky breathing. Alar felt a nerve throbbing restlessly in the small of his back. Haven pulled placidly at his pipe but his eyes missed nothing.

"The non-Aristotelians at their wildest never suggested that time could be traversed negatively unless—" Alar rubbed the side of his cheek in deep thought. The others waited.

"You said the pilot panel indicated the possibility of speeds beyond the velocity of light?" he asked Gaines.

"So it seemed. The drive proved to be virtually identical with that designed for the *T-twenty-two*."

"But by elementary Einsteinian mechanics trans-photic velocities are impossible," re-

monstrated Alar. "Nothing can exceed the speed of light—theoretically, at least. The fact that I may have been aboard a ship similar to the *T-twenty-two* means nothing to me. In fact the very name *T-twenty-two* seems meaningless. Where did our *T-twenty-two* get its name?"

"Haze-Gaunt adopted the name on a suggestion from the Toynbee Institute," replied Gaines. "It is simply an abbreviation of 'Toynbee Civilization Number Twenty-two.' The great historian gave each civilization an index number. The Egyptian was Number One, the Andean Number Two, the Sinic Number Three, the Minoan Number Four, and so on. Our present civilization, the Western, is Toynbee Number Twenty-one."

"The Toynbeans secretly theorized that an interstellar ship might save Toynbee Twenty-one by launching us into a new culture—Toynbee Twenty-two—in the same way the sail launched the Minoan thalassocracy, the horse the nomadic cultures, and the stone road the Roman Empire. So *T-Twenty-two* is more than just the name of a ship. It may prove the life-bridge, linking two destinies."

Alar nodded. "Quite plausible. There's no harm in hoping." But his thoughts were elsewhere. The *Phobos*, that had brought Gaines, was sunward bound. In the solarions would be men who had known Muir intimately. And then this question of negative time. How could a space-ship land before it took off?

Keiris broke into his reverie. "Since we've come to a standstill on solving your identity," she suggested, "suppose you tell us the rest of your star plate discovery. In the Galactarium you said there was more to come."

"Very well, then," agreed Alar. He plunged abruptly into his theme. "Ever since the completion of Lunar Station, we have assumed that it would be just a question of time until we penetrated the whole of space and found our own galaxy at the opposite pole of the universe."

"That was predictable and my discovery simply bore out the prediction. But there were some other developments in that section of the sky that were not so easily predictable."

"Let us go back a bit. Five years ago, as any student of astronomy knows, a body of incalculable mass, apparently originating at a point in space near our own sun cluster,

possibly quite near our own solar system, sped outward into space.

"It passed near the M Thirty-one galaxy, disrupted its outer edge with assorted novae and star collisions and then, apparently traveling at a speed greater than light, disappeared about three and one-half billion light years out. By 'disappeared' I mean that astronomers were no longer able to detect its influence on galaxies near the line of hypothetical flight.

"The reason they couldn't was that they were no longer looking in the right direction. The body had passed the midpoint of the universe, with respect to its point of origin and had begun to return. Naturally it was approaching in the opposite direction, which is of course the same direction in which the lunar reflector must be collimated to pick up our galaxy.

"In the six weeks that I have studied this sky-sector I have watched the effect of the unknown body on galaxies near its line of return and I have computed its path and velocity with considerable accuracy. The velocity, incidentally, is decreasing very rapidly from its outer space peak of two billion light years per year.

"Six weeks ago, when I first began my observations, it had almost completed its circuit of the universe and was returning to our own galaxy. Yesterday it passed so close to the Magellanic Clouds that its attraction drew them toward one another in what may be a collision course. In the Lesser Cloud I have already counted twenty-eight novae."

HE CONCLUDED tersely. "This body will land on Earth on July twenty-first."

A hush fell over the group. The only sound for several minutes was the rasping from Haven's empty pipe.

"The queer thing," mused Gaines, "is its varying mass. The disruption of the stars of our own galaxy in Andromeda is an old story, as Alar said. But the Andromeda star cluster was acted upon by something traveling just below the speed of light and with a mass of some twenty million galaxies concentrated at one point.

"But by the time that body reached the M Thirty-one galaxy some three weeks later, its velocity was many times that of light and its mass was incalculable—possibly bordering on the infinite if such a thing is per-

missible. I have no doubt but that Alar found the same conditions obtaining for its return—a gradual diminution of velocity and mass until, by the time it reaches Earth, it again has very little mass or velocity, at least none capable of affecting this system. Alar has supplied the final piece in the jigsaw puzzle that has driven astronomers crazy for five years. And now the assembled puzzle is even more incomprehensible than its parts."

"You said this body will 'land' on the earth," said Haven. "You think then—"

"It will prove to be another intergalactic ship."

"But even the biggest lunar or solar freighters don't exceed a mass of ten thousand tons," objected Gaines. "The ship that crashed five years ago was really rather small. Even the largest interstellar ship couldn't possibly have a detectable gravitational effect on a planet, let alone on a whole galaxy."

"Objects traveling at trans-photic velocities—even though such velocities are theoretically impossible—would approach infinite mass," reminded Alar. "And don't forget, the mass of this object increased with increasing velocity. Its mass at rest is probably relatively small. But it needn't be large if its velocity is trans-photic. I suspect that a mere gram weight hurled past the M Thirty-one nebula at a velocity of several million c's would do damage comparable to our own hypothetical intergalactic ship."

"But no intergalactic ships were known in the solar system five years ago," protested Keiris, yawning sleepily. "And you said that it *left* our system five years ago and passed by M Thirty-one at many times the velocity of light. Do you mean there are two intergalactic ships? One that arrived five years ago from parts unknown and a second one that left here five years ago and is due to return next week?"

Alar laughed harshly. "Insane, isn't it? Especially when there were no intergalactic or even interstellar ships in existence in the system five years ago."

"Maybe the Eastern Federation furnished it," suggested Haven. "I have a suspicion that Haze-Gaunt has consistently underestimated them."

"Not likely," said Gaines. "We know they've got a tremendous plutonium production network but that's just talcum powder compared to muirium. And they'd

have to have muirium for an interstellar drive and they don't have it—yet."

Alar began pacing the floor. Two intergalactic ships. One crashed five years ago and he must have been on it. Another was due to arrive on July 21—next week—bearing whom? Furthermore, on earth, the *T-Twenty-two* was due to blast off in the early morning of July 21. Again—with whom?

By the river that bore him, that made three ships! He groaned and gnawed at his lip. It seemed that the answer was within his grasp, that it lay on the tip of his tongue. That if he solved this riddle he would know who he was. He knew Haven and Gaines were watching him covertly.

How strange that he, the apprentice, had grown so in stature within the past few weeks. And yet he had no sensation of development. It seemed that the others were growing dull, slow-witted. The genius, he knew, never appears particularly intelligent to himself.

He stopped and looked at the woman.

Keiris seemed to be asleep. Her head had fallen forward on her right shoulder, and her gray lock hair had dropped over her right eye. Her face had assumed the same waxen pallor that had characterized her since her arrival at the observatory. Her chest rose and fell rhythmically under her enveloping cape.

As he stared at her closed and sunken eyes, the conviction seized him that he had seen her thus before—*dead*.

The Thief blinked. The hallucination was undoubtedly the result of overwork and sleeplessness. With his nervous system thus deranged he could endanger the lives of all of them.

"Gaines," he whispered, "your guard won't relieve the regular I.P. officer at the landing docks for another two hours. Let's all take a nap until then."

"I'll stand watch," volunteered Haven.

Alar smiled. "If they want to kill us, finding out about it in advance won't do us any good. I'll wake us up in plenty of time."

Haven patted a yawn. "All right."

Alar got down on the cold metal tiles just in front of Keiris' chair, forced his mind to become blank, and was instantly asleep.

After a quarter of an hour Keiris listened carefully to the steady breathing of her three companions, then opened her eyes and studied the man asleep at her feet. Her eyes soon came to rest on his upturned face.

It was a strange, unworldly face—yet attractive and gentle. A deep peace lay about the eyes. As she watched him, the lines in her own cheeks softened a little.

She crouched forward slowly, her moody, half-opened eyes fixed on the man's closed ones, and then got out of her chair entirely and stooped beside him.

She stiffened, then relaxed. Across the room Gaines mumbled fitfully and shifted in his chair.

Again she bent over the sleeping Thief until her eyes were but a few inches from his face. After a brooding pause, she eased back into the chair, slipped the sandal from her right foot with the toe of her left and flexed her toes luxuriously over Alar's chest. Her right foot reached hesitantly toward his face, then quickly withdrew.

She took a deep breath and clenched her teeth, and the next instant her long toes, like fingers, were caressing the man's cheek. She could feel the faint stubble of a new beard, the firm, angular cheek bone. Her spine tingled as his uncombed black hair passed slowly between her toes. Her face was flushed and hot and she had a curious feeling that time was standing still.

CHAPTER XIV

Escape from the Moon

TOward the end of the second hour Alar quickened his breathing. She thrust her foot into the sandal just before he opened his eyes and looked up at her.

His eyes roved somberly over her body, which was completely hidden from throat to knees by her cape, then returned to her face. He said quietly, "You have no arms."

She turned her face away.

"I should have guessed. Was it Shey?"

"It was Shey. The Thief surgeons told me there wasn't enough left of them—that they had to amputate to save my life. But it isn't too bad. I can wash my face, thread a needle, hold a knife—"

"You know that Thieves are not permitted to kill even in self-defense, Keiris?"

"I don't want you to kill Shey. It doesn't matter any more."

The Thief lay on the cold floor, his eyes hard and thoughtful.

At last the woman spoke. "Gaines' guard is probably on duty by now."

"Yes, I know." He got heavily to his feet and wakened the others.

Gaines rubbed his eyes and stretched. "The three of you will have to stay here a moment until I check our clearance with my man," he warned.

He stepped into the corridor, and the panel wound shut quietly behind him.

Alar was grateful for the few seconds delay. Ever since he had learned that the *Phobas* had docked, en route for the sun, he had been making calculations. Even now, despite the trauma wrought within him by what Shey had done to Keiris, his thoughts were sunward.

On the sun would be station masters who had served under Muir. If he could meet just one who knew Muir's whereabouts—just one who could explain why he, Alar, had been found with the Log of the *T-Twenty-two* in Muir's handwriting . . .

On the other hand, a quasi-safety awaited him on Terra, under the protection of the Society. There he could pursue his personal mystery in relative peace and quiet. And there he could be with Keiris, who really needed him now.

"Gaines ought to have been back before now," he said to Haven shortly. "Something may have gone wrong with his plan. I'd better reconnoiter."

Haven shook his head. "No, boy. I'll go."

Apparently Haven still viewed him as non-expendable. On the other hand he knew from his past experience with danger that he would be more likely to come back alive than Haven.

"You'd better stay with the girl," urged the biologist persuasively.

Against his better judgment Alar let the older man through the panel and watched him as he walked slowly up the corridor. At the first intersection Haven turned left toward the passenger docks. His head jerked once, and, leaning awkwardly against the intersection corner, he tried to turn around. Then he slumped to the floor.

Keiris watched Alar's body grow rigid. "What's wrong?" she whispered tensely.

The Thief turned an ashen face to her. "He has just been killed with a poison dart." Stricken eyes looked into hers and beyond. He had to breathe several times before he could speak again. "You stay here. I'm going out there."

But she followed him closely as he stepped through the panel and he knew it was futile to insist that she remain. Together they walked slowly up the corridor.

The Thief could not take his eyes from the sprawling body of the man who had walked into death—for him. He could not think but knew he must think, and quickly.

He paused a few feet before the intersection and looked at the face of his dead friend. It was a craggy noble face, almost beautiful now in its final peace.

While he gazed, the misty stupor that numbed his mind evaporated and he had a plan. He licked his lips and cleared his throat. His scheme required that the killers show themselves but to lure them out he would have to expose himself in the intersection with the probability that they would shoot first and ask questions later. It was a risk he had to run.

"I am unarmed," he called. "I wish to surrender."

The military heart, he knew, longed for recognition. The capture of a man who had eluded even the great Thurmond might bring a transfer to Terra and rapid promotion. He hoped an imaginative officer was in charge of the detail.

He stepped into the intersection.
Nothing happened.

AROUND the corner he could see Gaines' body sprawled out lifeless. A wicked metal sliver protruded from his neck. His bribed guard had evidently been discovered.

"Put your hands up, Alar—slowly," said a tense voice behind him. "You too, sister."

"I will do so but madame has no arms and cannot raise her hands," said Alar, concealing the rising excitement in his voice. Arms high, he turned slowly and saw a young I.P. officer covering him with a snub-nosed gun, apparently powered by compressed air or by a mechanically wound spring to give a muzzle velocity of a hundred or so meters a second—just slow enough to penetrate Thief armor.

"You're right," said the officer grimly, noting Alar's rapid survey of the weapon. "It's not accurate beyond fifty yards but its poison darts kill faster than bullets. Fourteen of these guns are covering you from peep holes at this instant." He pulled a pair of handcuffs from his pocket and approached the two cautiously.

The icy exterior of the Thief's face concealed a frantically racing mind. Both eyes were focused on the radioreceptor button on the guard's right shoulder, directly below the ear, that connected all guard personnel with the central police room. Alar's eyes were growing beady and feverish but nothing was happening.

He knew he was capable of emitting photic beams in the infra-red with a wave length of at least half a millimeter. The U.H.F. intercom band certainly shouldn't exceed a meter. Yet his eyes were pouring out the electromagnetic spectrum from a few Angstroms to several meters, without raising a squeak in the receptor button.

Something had gone wrong. He was aware of Keiris' body shivering near his side.

In another instant the I.P. would step around to slap the handcuffs on him from behind and he would lose precious visual contact with the receptor disc.

Suddenly the button whistled. The officer stopped uncertainly.

A bead of perspiration slid down Alar's cheek and dangled at his stubbled chin.

"A.M." said Keiris quietly.

Of course! Amplitude modulation, unheard of since the earliest days of radio, could be used here, where there was virtually no static.

"Instructions for Gate Eleven," intoned the receptor button. "It has been decided to permit the Alar group to 'escape' in their ship. No further attempt shall be made to kill or capture members of the party. End."

Although modified by the liaison neural network that integrated his larynx, optic lobe and retina, further disguised by the imperfections of the one-inch speaker cone on the officer's shoulder, it seemed to Alar that the other could not fail to recognize the voice of the man he was about to manacle.

"You heard Center," said the officer harshly. "Get going. Carry this stuff with you; I'll have the other sent out." His face was knotted in a hard smile. Quite evidently he expected the great lunar guns to open up on the tiny craft immediately after it had blasted off.

The Thief knelt without a word and gently gathered Haven's body into his arms. The body of the older man seemed curiously shriveled and small. Only now did Alar realize what stature the bare fact of being alive contributed to flesh and bone.

Keiris led the way and opened the panels

for them. The little spacer was just ahead. To one side of it lay a large freighter, the *Phobos*. Someone was on the landing platform and calling into the sunbound ship. "No word yet. We'll give him three minutes."

Alar's heart skipped a beat. Slowly he climbed the ramp to the Thief spacer, stooping as he entered.

His lifeless burden he placed on one of the rear bunks.

A puffing guard dragged Gaines in behind him, left the body on the cabin floor and departed without a word.

Alar looked up pensively, and after a few seconds realized that he was gazing into Keiris' somber eyes.

"My hypothesis was wrong," he said.

"You mean about the two—or was it three—intergalactic ships?"

"Yes. I said that one left the earth five years ago, crossed the universe and is due to return in a few days—on July twenty-first."

She waited.

"It can't be returning," said Alar, still seeming to stare through her, "because it hasn't left yet."

The cabin was utterly silent.

"To travel at a velocity greater than light," continued the Thief, "seems to require that the Einsteinian equation for the equivalence of mass and energy be overthrown. But the conflict is only apparent. The mass of a Newtonian body may be restated in terms of an Einsteinian body through a correction factor thus—"

He wrote the formula on a bulkhead with a pencil:

$$m \frac{c}{\sqrt{c^2 - v^2}} = M.$$

"Here c is the velocity of light, v the velocity of the moving body, m is Newtonian mass and M is Einsteinian mass. As v increases, of course, M must grow. As v approaches c , M approaches infinity. Heretofore we have considered c a limiting velocity. Yet it can't be, because something—my hypothetical intergalactic ship—has crossed the universe in only five years—less than one-billionth the time required by light. So v can be greater than c .

"But when v is greater than c it would seem that Einsteinian mass M must be meaningless, involving as it does the square root of a negative number. But such a conclusion is inconsistent with the observed effect of the

ship on galactic matter during the whole of its flight.

"Now the alternative to meaningless M is negative v, which would make v-square positive, and the equation then follows the usual pattern for the determination of M. But v is simply a ratio of distance to time. Distance is a positive scalar quantity but time can be either positive or negative, depending on whether it stretches into the future or the past."

HE LOOKED at her in triumph. "What I'm saying is, that it is a necessary and sufficient condition for trans-photic velocities that the ship move backward in time."

"Then," she said wonderingly, "a ship traveling faster than the speed of light would land before it ever blasted off. So there never were three or even two ships but only one. The ship that brought you to earth five years ago—"

"Really is the *T-Twenty-two*, which won't be launched until July twenty-first."

The woman leaned dizzily against the curving cabin wall.

Alar continued with bitter amusement. "Do I hop into the *T-twenty-two* next week for a five-year cruise backward in time? Is the original unwitting Alar walking the earth at this moment, planning on the same thing? Will he take the original of that little ape of Haze-Gaunt's as mascot?" He laughed unsteadily. "Why, it's the damnedest thing I ever—" He broke off abruptly. "I'm not returning to Earth with you."

"I know. I'm sorry."

Alar blinked. "You mean, you knew just now, after I told you."

"No. The *Phobos* is en route to the sun. You think you'll be able to find some of my husband's old friends who can tell you something about yourself. The Microfilm Mind said you'd try to go if the opportunity arose."

"He did?"

"He further stated that you'd discover your identity there."

"Ah!" The Thief's eyes flamed up. "Why

didn't you tell me before?"

The woman studied the floor. "Life in a solarion is dangerous."

His laughter was soft, brittle. "Since when has danger been a determining factor with either of us? What's the real reason for holding back?"

She turned up her quiet eyes to his. "Because when you learn about yourself, the information will be useless. The Mind said that in the act of dying, you would remember everything." She studied his face anxiously. "If you want to die why not return to the Society and do it profitably? Does it really matter who you were five years ago?" Color was flooding into her face.

For the first time within his remembered life Alar found it impossible to make a quick decision. Recovering his past at the cost of his future would be a poor bargain. Perhaps it would be better to return with Keiris and spend a longer more useful life as a Thief.

He took her by the shoulders. "Goodbye, Keiris."

She turned her head away. "Captain Andrews of the *Phobos* is waiting for Dr. Talbot, of the Toynhecan Institute. Remember Talbot at the ball? He's a Thief and has orders from the Mind to let you go in his place."

Free will!

For a moment it seemed to him that every man in the solar system was just a pawn on the Mind's horizonless chessboard. "You have a stage goatee for me, of course? Like Talbot's?" he asked blandly.

"You'll find it in an envelope in my coat pocket, along with his passport, stateroom key, and tickets. You better fix it on now."

The situation was here. It just had to be accepted. He fished the envelope out quickly, patted the beard in place, then hesitated.

"Don't bother about me," Keiris assured him. "I can jet the ship back without trouble. I'm going to bury—them—in deep space. Then I'm going on in to Earth to check on something at the central morgue."

He was only half listening. "Keiris, if you were only the wife of a man other than Kenneth Muir—or if I thought he were dead—"

"Don't miss the *Phobos*."

He gave her one last remembering look, then turned silently and vanished down the hatchway. She heard the space lock spin shut.

"Goodbye darling," she whispered. She knew that she would never see him alive again.

NEXT ISSUE

HOLLYWOOD ON THE MOON

A Hall of Fame Classic

By HENRY KUTTNER

PLUS MANY OTHER STORIES

CHAPTER XV

Hotspot Madness

"EVER been on the sun before, Dr. Talbot?" Captain Andrews appraised the new passenger curiously. They were together in the observation room of the *Phobos*.

Alar could not admit that everything on the run from Luna to Mercury (which planet they had left an hour previous) had seemed tantalizingly familiar, as though he had made the trip not once but a hundred times. Nor could he admit that astrophysics was his profession. A certain amount of celestial ignorance would be forgiven—indeed required—in a historian.

"No," said the Thief. "This is my first trip."

"I thought perhaps I'd brought you out before. Your face seems vaguely familiar."

"Do you think so, Captain? I travel quite a bit on earth. At a Toynbeean lecture possibly?"

"No. Never go to them. It would have to be somewhere along the solar run or nothing. Imagination, I guess."

Alar writhed inwardly. How far could he push his questioning without arousing suspicion? He stroked his false goatee with nervous impatience.

"As a newcomer," continued Captain Andrews, "you might be interested in how we pick up a solariion." He pointed to a circular fluorescent plate in the control panel. "That gives us a running picture of the solar surface in terms of the H line of calcium Two—ionized calcium, that is.

"It shows where the solar prominences and faculae are because they carry a lot of calcium. You can't see any prominences on the plate here—they're only visible when they're on the limb of the sun, spouting up against black space. But here are plenty of faculae, these gassy little puffs floating above the photosphere—they can be detected almost to the center of the sun's disc. Hot but harmless."

He tapped the glass with his space-nav parallels. "And the place is swarming with granules—'solar thunderheads' might be a better name. They bubble up several hundred miles in five minutes and then vanish.

If one of them ever caught the *Phobos* . . ."

"I had a cousin, Robert Talbot, who was lost on one of the early solar freighters," said Alar casually. "They always thought a solar storm must have got the ship."

"Very likely. We lost quite a few ships before we learned the proper approach. Your cousin, eh? Probably it was he I was thinking of, though I can't say the name is familiar."

"It was some years ago," said Alar, watching Andrews from the corner of his eye, "when Kennicot Muir was still running the stations."

"Hm. Don't recall him." Captain Andrews returned noncommittally to the plate. "You probably know that the stations work at the edges of a sunspot, in what we call the penumbra. That procedure has several advantages.

"It's a little cooler than the rest of the chromosphere, which is easier on the solariion refrigerating system and the men, and the spot also provides a landmark for incoming freighters. It would be just about impossible to find a station unless it were on a spot. It's hard enough to locate one on the temperature contour."

"Temperature contour?"

"Yes—like a thirty-fathom line on a sea-coast. Only here it's the five-thousand line. In a few minutes, when we're about to land, I'll throw the jets over on automatic spectrographic steering and the *Phobos* will nose along the five-thousand degree Kelvin contour until she finds Solariion Nine."

"I see. If a station ever lost its lateral jets and couldn't stay on the five-thousand line how would you find it?"

"I wouldn't," said Captain Andrews shortly. "Whenever a station turns up missing, we always send out all our search boats—several hundred of them—and work a search pattern around that sun spot for months. But we know before we start that we won't find anything. We never have. It's futile to look on the surface for a station that has been long volatilized deep at the vortex of a sun spot."

"The stations are under automatic spectrographic control, of course, and the spec is supposed to keep them on the five-thousand line but sometimes something goes wrong with the spec or an unusually hot Wilson gas swirl spills out over the edge of the spot and fools the spec into thinking the station is standing way out from the

spot, say on the hotter five-thousand four hundred line.

"So the automatic spec control moves the station farther in toward the spot, maybe into the slippery Evershed zone at its very lip. From there the station can slide on into the umbra. I know of one ship that crawled out of the Evershed. Its crew had to be replaced in toto. But no solarion ever came out of the umbra. So you can't rely entirely on the spec control."

"Every station carries three solar meteorologists too and the weather staff issues a bulletin every quarter-hour on the station's most probable position and on any disturbances moving their way. Sometimes they have to jump fast and in the right direction.

"And even the finest sunmen can't foresee everything. Four years ago the Three, Four and Eight were working a big 'leader'—(spots are like poles in a magnet—always go in pairs, and we call the eastern spot the 'leader,' the western one the 'follower')—when the Mercury observatory noticed the leader was rapidly growing smaller.

"By the time it occurred to the observatory what was happening, the spot had shrunk to the size of Connecticut County. The patrol ship they sent to take off the crews got there too late. The spot had vanished. They figured the stations would try to make it to the 'follower' and settle somewhere in its Five-thousand line.

"The Eight did—barely. Luckily, it had been working the uppermost region of the leader and, when the spot vanished from beneath it, it had to drift down toward the solar equator. But while it was drifting it was also clawing back toward the follower with its lateral jets and it finally caught the follower's southern tip."

"What about the other two stations?" asked Alar.

"No trace."

THE Thief shrugged mental shoulders. A berth in a solarion wasn't exactly like retiring on the green benches of La Paz. He had never had any illusions about that. Perhaps the Mind had considered the possibilities of his survival in a solar system purely on cold statistics.

Of the twenty-seven costly solarions, towed one by one to the sun during the past ten years, sixteen remained. The average life of a station was about a year. The staff was rotated continuously, each man, after

long and arduous training, being assigned a post for sixty days—three times the twenty-day synodic period of rotation of the sun with respect to the eighty-eight day sidereal period of Mercury.

When the Mercury observatory reached opposition with a given solar station, as it did every twenty days, a freighter carried in replacements for one-third of the staff and took away the oldest one-third along with a priceless cargo of muirium. The *Phobos*, he knew, was bringing in eleven replacements but so far they had confined themselves closely to their own quarter of the ship and he had been unable to meet any of them.

Captain Andrews had apparently dismissed the problem of Alar's pseudo-familiarity and the Thief could think of no immediate way to return to the subject. For the time being he would have to continue to be Dr. Talbot, the historian, ignorant of things solar.

"Why," he asked, "if the stations are in such continual danger aren't they equipped with full space drives, instead of weak lateral jets? Then if the station skidded into a spot beyond the present recovery point she could simply blast free."

Andrews shook his head. "Members of parliament have been elected and deposed on that very issue. But it has to be the way it is now when you consider the cost of the solarion. It's really just a vast synthesizer for making muirium with a little bubble of space in the middle for living quarters and a few weak lateral jets on the periphery."

"A space ship is all converter, with a little bubble here amidships for the crew. To make a space ship out of a solarion you'd have to build it about two hundred times the present solarion size, so that the already tremendous solarion would be just a little bubble in an unimaginably enormous space ship."

"There's always a lot of talk about making the stations safe but that's the only way to do it and it costs too much money. So the Spaceways Ministers rise and fall but the stations never change. Incidentally, on the cost of these things, I understand that about one-fourth of the annual Imperium budget goes into making one solarion."

The intercom buzzed. Andrews excused himself, answered it briefly, then replaced the instrument. "Doctor?" The officer seemed strangely troubled.

"Yes, captain?" His heart held no warning beat but it was impossible not to realize that something unusual and serious was in store.

Andrews hesitated a moment as though he were about to speak. Then he lifted his shoulders helplessly. "As you know, I'm carrying a relief crew to Nine—your destination. You haven't met any of them before because they keep pretty much to themselves. They would like to see you in the mess—now."

It was clear to Alar that the man wanted to say more, perhaps give him a word of warning.

"Why do they want to see me?" he asked bluntly.

Andrews was equally curt. "They'll explain." He cleared his throat and avoided Alar's arched eyebrows. "You aren't superstitious, are you?"

"I think not. Why do you ask?"

"I just wondered. It's best not to be superstitious. We'll land in a few minutes, and I'm going to be pretty busy. The catwalk on the left will take you to the mess."

The Thief frowned, stroked his false goatee, then turned and walked toward the exit panel.

"Oh, doctor," called Andrews.

"Yes, captain?"

"Just in case I don't see you again I've discovered whom you remind me of."

"Who?"

"This man was taller, heavier and older than you and his hair was auburn while yours is black. And he's dead, anyway, so really there's no point in mentioning—"

"Kennicot Muir?"

"Yes." Andrews looked after him rather meditatively.

Always Muir! If the man were alive and could be found, what an inquisition he would face! Alar's footsteps clanged in hollow frustration as he strode across the catwalk over an empty decontaminated muirium hold.

Muir must certainly have been on the *T-22* when it crashed at the end of its weird journey backward in time; the log book was evidence of that. But he, Alar, had crawled out of the river carrying the book. What had happened to Muir? Had he gone down with the ship? Alar chewed his lower lip in exasperation.

There was a more immediate question—what did the relief crew want with him? He welcomed the chance to meet them but he wanted to be the one to ask questions. He felt off-balance.

What if one of the crew had known the true Dr. Talbot? And, of course, any of the eleven might be an I.P. in occupational dis-

guise, warned to be on the lookout for him. Or perhaps they didn't want him along on general principles. After all, he was an uninvited outsider who might disturb the smooth teamwork so necessary to their hourly survival.

Or possibly they had invited him in for a little hazing, which he understood was actually encouraged by the station psychiatrist for the relief of tension in new men, so long as it was done and over before they came on station.

As he left the catwalk for the narrow corridor, he heard music and laughter ahead.

HE SMILED. A party. He remembered now that the incoming shift always gave themselves a farewell party, the main features of which were mournful, interminable and nonprintable ballads, mostly concerning why they had left Terra to take up their present existence—new and unexpurgated stereographic movies of dancing girls clothed mainly with variegated light (personal gift of the Minister for Space), pretzels and beer.

Only beer, because they had to check into the station cold sober. Two months later, if their luck held, they'd throw another party on the *Phobos* and the *Phobos* crew would join in. Even the staid blunt Andrews would spend a couple of big ones in toasting their safe return.

But not now. The outgoing festivities were strictly private—for summen only. No strangers were ever invited. Even an incoming station psychiatrist was excluded.

What then? Something was wrong.

As he stood poised to knock on the door, he found himself counting his pulse. It throbbed at one hundred fifty and was climbing.

His knuckled hand dropped in an instinctive motion toward a non-existent saber pommele. Weapons were forbidden on the *Phobos*. But what danger could there be in such self-commiserating good fellowship? Still, suppose they tried a little horseplay and yanked at his false beard? While he hesitated the music and laughter died away.

Then the ship lurched awkwardly, and he was thrown against the door. The *Phobos* had nosed into Solarion Nine and was sealing herself to the entry ports. A wild cheer from within the mess rose above his crash against the door.

Whether they hailed the survival of the

station or their own imminent departure he could not be sure. There was something mocking and sardonic about the ovation that led him to suspect the latter. Let the old shift do their own cheering.

"Come in!" boomed some one.

He pushed the door aside and walked in.

Ten faces looked at him expectantly. Two of the younger men were sitting by the stereograph, but the translucent cube that contained the tri-di image was dark. It had evidently just been turned off.

Two men were returning from a table laden with a beer keg, several large wooden pretzel bowls, beer mugs, napkins, ash trays and other bric-a-brac and were headed toward the dining table nearest the Thief. At the table six men were in the act of rising. The missing eleventh face was probably the psychiatrist—absent by mutual understanding and consent.

The party was over, he sensed uneasily. This was something different.

"Dr. Talbot," said the large florid man with the booming voice, "I'm Miles, incoming station master for the Nine."

Alar nodded silently.

"And this is my meteorologist, Williams—MacDougall, lateral jet pilot—Florez, spectroscopist—Saint Claire, production engineer...."

The Thief acknowledged the introductions gravely but noncommittally, down to young Martinez, clerk. His eyes missed nothing. These men were all repeaters. At some time in the past they had all oozed cold sweat in a solar station, probably most of them at different times and in different stations. But the common experience had branded them, welded them together and cast them beyond the pale of their earthbound brothers.

The twenty eyes had never left his face. What did they expect of him?

He folded his hands inconspicuously and counted his pulse. It had leveled off at one-sixty.

Miles resumed his rumble: "Dr. Talbot, we understand that you are going to be with us for twenty days."

Alar almost smiled. Miles, as a highly skilled and unconsciously snobbish sunman of long experience, held in profound contempt any unit of time less than a full and dangerous sixty days' shift.

"I have requested the privilege," returned the Thief gravely. "I hope you haven't decided that I'll be in the way. The Toynbeean

Institute has long been anxious to have a professional historian prepare a monograph—"

"Oh, we don't care why you're coming, Dr. Talbot. And don't worry about getting in our way. You look as though you have sense enough to stay clear when we're busy and you'll be worth your weight in *unitas* if you can keep the psych happily occupied and out of our laps. You play chess, I hope? This psych we have is an Eskimo."

He couldn't remember having heard the term "Eskimo" applied to a sun man before and he was astonished that he understood its meaning, which seemed to spring to mind unbidden, as though from the mental chamber that contained his other life. He had made no mistake in deciding to board the *Phobos*. But for the moment he must pretend ignorance.

"Chess—Eskimo?" he murmured with puzzled politeness.

Several of the men smiled.

"Sure, Eskimo," boomed Miles impatiently. "Never been in a solarion before. Has the sweat he was born with. Probably fresh out of school and loaded down with chess sets to keep our minds occupied so we won't brood." He laughed suddenly, harshly. "So we won't brood! Great flaming faculae! Why do they think we keep coming back here?"

Alar realized that the hair was crawling on his neck and that his armpits were wet. And he knew now what common brand had marked these lost souls and joined them into an outré brotherhood.

As the real Talbot had surmised that night at the ball, *every one of these creatures was stark mad!*

"I'll try to keep the psych occupied," he agreed with plausible dubiousness. "I rather like a game of chess myself."

"Chess!" murmured Florez, the spectroscopist, with dispassionate finality, turning from Alar to stare wearily at the table. His complete absence of venom did not mute his meaning.

MILES laughed again and fixed Alar with bloodshot eyes. "But we didn't invite you here simply to ask you to get the psych out of our hair. The fact is, all ten of us are Indians—old sunmen. And that's unusual. Generally we have at least one Eskimo in the bunch."

The big man's hand flashed into his pocket and two dice clattered along the table toward the Thief. There was a sharp intake of

breath somewhere down the table. Alar thought it was Martinez, the young clerk. Everyone pressed slowly on either side of the table toward their guest and the white cubes that lay before him.

"Will you please pick them up, Dr. Talbot?" demanded Miles.

Alar thought, "Why should I? On the other hand, why not?" He reached out slowly, gathered them up into his right hand and looked at Miles. "Well?"

"When we have a genuine Eskimo, Dr. Talbot, we ask him to throw the dice. The psych's an Eskimo, but all psychs are poison. That leaves you or Martinez. Martinez has served only two shifts and he hasn't really crowded his luck too far to disqualify him. But we don't want to use him if we can help it."

"The rest of us are no good. Florez is next lowest with five shifts. This would be his sixth—utterly impossible, of course. And so on up to me, with full ten years' service. I'm the Jonah. I can't roll 'em. That leaves you. You're not really an Eskimo—you'll be with us only twenty days—but several of us old timers have decided it'll be legal because you resemble an old friend."

Muir, of course. It was fantastic. The Thief aroused himself as though from a heavy dream. The dice felt cold and weightless in his numbing fist. And his heart beat was climbing again.

He cleared his throat. "May I ask what happens after I roll the dice?"

"Nothing—immediately," replied Miles. "We just file out, grab our gear, and walk up the ramp into the station."

It couldn't be that simple. Martinez' mouth was hanging open as though his life depended on this. Florez was hardly breathing. And so on around the table. Even Miles seemed more flushed than when Alar entered the room.

He thought furiously. Was it a gamble involving some tremendous sum that he was deciding? The sun men were bountifully paid. Perhaps they had pooled their earnings and he was to decide the winner.

"Will you hurry yourself, *por favor*, Dr. Talbot?" said Martinez faintly.

This was something bigger than money. Alar rattled the dice loosely in his hand and let them go.

And in the act a belated warning seemed to bubble up from his fogged preamnesic life. He clawed futilely at the cubes but it was too

late. A three and a four.

He had just condemned a solarion crew—and himself—to death.

Alar exchanged glances with Martinez, who had suddenly become very pale.

A solarion dies once a twelvemonth, so a sunman on a two-month shift has one chance in six of dying with it. Florez couldn't make the throw because this would be his sixth shift and by the laws of chance his time was up.

One in six—these madmen were positive that a roll of the dice could predict a weary return to Terra—or a vaporous grave on the sun.

One chance in six. There had been one chance in six of throwing a seven. His throw would kill these incredible fanatics just as surely as if he cut them down with a Kades. These ten would walk into the solarion knowing that they would die and sooner or later one of them would subconsciously commit the fatal error that would send the station plunging down into the sun spot vortex, or adrift on the uncharted, unfathomable photosphere. And he would be along.

It seemed that everyone, for a queer unearthly hiatus, had stopped breathing. Martinez was moving pallid lips but no sound was coming out.

Indeed, no one said anything at all. There was nothing to say.

Andrews thoughtfully thrust an enormous black cigar into his mouth, pushed his chair back to the table and walked slowly from the room without a backward glance. The others followed, one by one.

Alar waited a full five minutes after the footsteps had died away toward the ramp, full of wonder both at his stupidity and at the two tantalizing flashes from his other life.

His death was certain if he followed them into the solarion. But he couldn't hang back now. He recalled the Mind's prediction. It had been a calculated risk.

His main regret was that he was now *persona non grata* to the crew. It would be a long time before he learned anything from these fanatics—probably not before one of them destroyed the station. But it couldn't have been helped.

He stepped into the corridor, looked toward the ramp a dozen yards away and sucked in his breath sharply. Four I.P.'s favored him with stony stares, then, as one man, drew their sabers.

Then a horrid, unforgettable giggle bit at

his unbelievable left ear.

"Small solar system, eh, Thief?"

CHAPTER XVI

Reunion Near Sol

“VISITORS are not allowed in this portion of the morgue, madame. There's nothing here but unclaimed bodies." The gray-clad slave attendant barring her way bowed unctuously but firmly.

The only sign of Keiris' impatience was a faint dilation of the nostrils. "There are one thousand unitas in this envelope," she said quietly, indicating the packet fastened beneath her cape clasp. "I will need only thirty seconds within the cubicle. Unlock the door."

The slave eyed the envelope hungrily and swallowed nervously. His eyes studied the hall behind the woman.

"A thousand unitas isn't much. If I got caught, it would mean my life."

"It's all I have." She noted with alarm the man's growing firmness.

"Then you can't go it." He folded his arms before his chest.

"Do you want your freedom?" demanded Keiris abruptly. "I can tell you how to get it. You need only take me alive. I am Madame Haze-Gaunt."

The slave gaped at her.

She continued swiftly. "The chancellor has offered a billion-unita reward for my capture. Enough," she added caustically, "to buy your freedom and set yourself up as a great slave-holder. All you have to do is lock me in the cubicle behind you and notify the police."

Was it worth this to her? A few moments would tell.

"But don't cry out before you let me into the room," she warned quietly. "If you do I have a knife with which I will kill myself. Then you will not get the billion unitas. Instead, they will kill you."

The attendant gasped something incomprehensible. At last his trembling fingers got the keys from his pocket and, after several false tries, he finally succeeded in unlocking the door.

Keiris stepped inside quickly, and the door slammed locked behind her. She didn't give the door a second glance but looked about her

quickly. The tiny room, like the thousands of others on this level, contained but one thing—a cheap transparent plastic casket resting on a waist-high wooden platform.

A strange feeling came over Keiris. It seemed to her that her whole life revolved around what she would learn in the next few seconds. Even the Mind, for all his detailing scrutiny, had probably never thought of checking the morgue. After all, the T-22 Log mentioned only two living things, both of which had long been identified as Alar and Haze-Gaunt's ape-creature.

For the moment she avoided looking at what was inside but instead read the printed and framed legend resting on the upper surface:

Unidentified and unclaimed. Recovered by Imperial River Police from the Ohio River near Wheeling on July 21, 2172.

Would it be Kim?

Finally Keiris forced herself to look into the casket.

It was not Kim.

It was a woman. The body was loosely clad from toes to breasts in thin mortuary gauze. The face was pale and thin and the translucent skin was drawn tightly over the rather high cheek bones. The long hair was black except for a broad white streak streaming from the forehead.

A key was turning in the lock behind her. Let them come.

The door burst open. Someone, in the ungrammatical terseness of the well-trained I.P., said, "It's her."

She had time for only one more look at the corpse, but one more look at its armless shoulders, but one more look at the knife buried in its heart—a knife identical to the one she now carried in the sheath on her left thigh.

* * * * *

The meaning of the four guards at the ramp was now only too clear to the Thief. Shey had put them there. Others were undoubtedly behind him.

Shey, then, must be Miles' "Eskimo psych"—and with animal cunning the little man had been waiting for Alar on the *Phobos* ever since its arrival on the moon.

But instead of feeling trapped the Thief felt only elated. At least, before he died, he would have an opportunity to punish Shey.

Shey's present precautions would certainly

have been enough to capture an ordinary fugitive. But the same was true of the other traps that had been laid for Alar. The wolfpack was still proceeding on the assumption that methods applicable to human beings, enlarged and elaborated perhaps, were equally applicable to him. He believed now that their premise was wrong.

The image of Keiris' preternatural slenderness flashed before him. Yes, the time had come to punish Shey. His oath as a Thief prevented his killing the psychologist but justice permitted other remedies, which could best be administered aboard the solarion. In the meantime—

He turned slowly, bracing himself mentally for the photic blast to come.

"Do you see this finger, Shey?" He held his right forefinger erect midway on the line joining his eyes with the psychologist's.

By pure reflex action Shey's pupils focused on the finger. Then his neck jerked imperceptibly as a narrow 'x' of blue-white light exploded from Alar's eyes into his.

THE next five seconds would tell whether the Thief's gambling attempt at hypnosis by overstimulation of the other's optical sensorium had been successful.

"I am Dr. Talbot of the Toynbeean Institute," he whispered rapidly. "You are the incoming psych for the Solarion Nine. As we approach the guards on the ramp tell them everything is all right and ask them to bring in our gear immediately." Shey blinked at him.

Would it really work? Was it too preposterous? Had he been insanely overconfident?

The Thief wheeled and walked briskly toward the ramp and the watchful I.P.'s. Behind him came the sound of running feet.

"Stop!" cried Shey, hurrying up with his other four guards.

Alar bit his lip indecisively. He had evidently lost the gamble. If Shey planned to have him killed on the spot he should try to break past the swordsmen on the ramp into the solarion. A means of escape might open up in the resulting confusion. Undoubtedly Miles would not submit tamely to Shey's forcible invasion.

"Don't harm that man!" called Shey. "He's not the one."

He had done it.

* * * * *

"Well, Dr. Talbot," giggled Shey, "what is the Toynbeean opinion of life in a solarion

on this July twentieth?"

Alar pushed himself away from the table in Shey's private dining room and stroked his false goatee thoughtfully. "After forty-eight hours here, I've come to the opinion that a sixty-day shift in a solarion ruins a man's nervous system for life. He comes in fresh and sane. He leaves insane."

"I agree, doctor, but doesn't this deterioration in the individual have a larger significance to a Toynbeean?"

"Very possibly," admitted the Thief judicially. "But first, let us examine a society of some thirty souls, cast away from the mother culture and cooped up in a solarion. Vast dangers threaten on every side. If the Fraunhofer man should fail to catch an approaching calcium facula in time to warn the lateral jet man—bang—the station goes."

"If the apparatus that prevents solar radiation from volatilizing the station by continuously converting the radiation into muirium should jam for a split second—woosh!—no more station. Or say the freighter fails to show up and cart the muirium away from the stock rooms, forcing us to turn muirium back into the sun—another bang."

"Or suppose our weatherman fails to notice a slight increase in magnetic activity and our sun spot suddenly decides to enlarge itself in our direction with free sliding to the sun's core. Or suppose the muirium anti-grav drive breaks down upstairs, and we have nothing to hold us up against the sun's twenty-seven G's. Or let the refrigeration system fail for ten minutes . . ."

"You can see, Count Shey, that it is the normal lot of people who must live this life to be—by terrestrial standards—insane. Insanity under such conditions is a useful and logical defense mechanism, an invaluable and salutary retreat from reality."

"Until the crew makes this adjustment—'response to challenge of environment' as we Toynbebeans call it—they have little chance of survival. The will to insanity in a sunman is as vital as the will to irrigate in a Sumerian. But perhaps I encroach on the psychologist's field."

Shey smirked. "Though I can't agree with you entirely, doctor, still you may have something. Would you say, then, that the *raison d'être* of a solarion psychiatrist is to drive the men toward madness?"

"I can answer that question by asking another," replied Alar, eyeing his quarry covertly. "Let us suppose a norm for ex-

istence has been established in a given society. If one or two of the group deviate markedly from the norm we say they are insane.

"And yet the whole society may be considered insane by a foreign culture which may consider the one or two recalcitrants the only sane persons in the model society. So can't we define sanity as conformity to—and belief in—the norm of whatever culture we represent?"

Shey pursed his lips. "Perhaps."

"And then, if a few of the crew can't lose themselves in a retreat from the peril of their daily existence—if they can't cling to some saying certainty, even if it is only the certainty of near death—or if they can't find some other illusion that might make existence bearable—isn't it your duty to make these or other forms of madness easy for them? To teach them the rudiments of insanity, as it were?"

Shey sniggered uneasily. "In a moment you'll have me believing that in an asylum, the only lunatic is the psychologist."

ALAR regarded him placidly as he held up his wine glass. "Do you realize, my dear count, that you have repeated your last sentence not once but twice? Do you think I am hard of hearing?" He sipped at his wine casually.

Started disbelief showed in the psychologist's face. "You imagined that I repeated myself. I distinctly remember—"

"Of course, of course. No doubt I misunderstood you." Alar lifted his shoulders in a delicate apology. "But," he pressed, "suppose you *had* repeated yourself and then denied it. In a layman you'd probably analyze such fixation on trivia as incipient paranoia, to be followed in due time by delusions of persecution.

"In you, of course, it's hardly worth consideration. If it happened at all it was probably just an oversight. A couple of days on one of these stations is enough to disorganize almost anyone." He put his wine glass down on the table gently. "Nothing in your room has been trifled with lately?"

He had slipped into Shey's quarters the previous day and had rotated every visible article 180 degrees.

Shey giggled nervously. Finally he said, "Certainly not."

"Then there's nothing to worry about." Alar patted his goatee amiably. "While we're

on the subject, you might tell me something. As a Toynbeean, I have always been interested in how one person determines whether another is sane or insane. I understand you psychologists actually have cut-and-dried tests of sanity."

Shey looked across the table at him narrowly, then chuckled. "Ah, sanity—no, there's no simple book test for that but I do have some projection slides that evaluate one's motor and mental integration. Such evaluation, of course, is not without bearing on the question of sanity, at least sanity as I understand it. Would you care to run through a few of them with me?"

Alar nodded politely. Shey, he knew, wanted to run the slides more to reassure himself than to entertain his guest.

The psychologist was due for the rudest shock of his life.

Shey quickly set up the stereograph and tri-di cube screen. "We'll start with some interesting maze slides," he chirped, switching off the light that dangled from the ceiling hook. "The ability to solve mazes quickly is strongly correlated to analyses of our daily problems. The faltering maze-solver unravels his difficulties piecemeal and lacks the cerebral integration that characterizes the executive."

"It is interesting to note that the schizophreniac can solve only the simplest mazes, even after repeated trials. So here's the first and simplest. White rats solve it—laid out on the floor with walls, of course—after three or four runs. A child of five, viewing it as we shall here, gets it in about thirty seconds. Adults instantaneously."

"Quite obvious," agreed Alar coolly as he projected a false opening in the outer maze border and covered the real one with a section of false border.

Shey stirred uneasily but apparently considered his inability to solve the maze as a passing mental quirk. He switched slides.

"What's the average time on this next one?" asked Alar.

"Ten seconds."

The Thief let the second and third ones go by without photic alteration. Shey's relief was plain even in the darkness.

But on the fourth slide Alar alternately opened and blocked various passages of the maze and he knew that Shey, standing beside the projector, was rubbing his eyes. The little psychologist sighed gratefully when his guest suggested leaving the maze series

and trying something else.

The Thief smiled.

"Our second series of slides, Dr. Talbot, shows a circle and an ellipse side by side. On each successive slide—there are twelve—the ellipse becomes more and more circular. Persons of the finest visual discrimination can detect the differences on all twelve cards. Dogs can detect two, apes four, six-year-old children ten, and the average man eleven. Keep your own score. Here's the first one."

A large white circle showed on a black screen and near the circle was a narrow ellipse. That was pretty obvious. Alar decided to wait for the next one.

NON THE second slide Shey frowned, removed it from the projector, held it up to the light of the cube screen, then inserted it once again. On the third slide he began to chew his lips. But he kept on. When the tenth was reached he was perspiring profusely and licking sweat from the edges of his mouth.

The Thief continued to make noncommittal acknowledgments as each slide was presented. He felt no pity whatever for Shey, who had no means of knowing that from the second slide on, there were no ellipses, only pairs of identical circles. Each ellipse had been cancelled by a projection from Alar's eyes, and a circle substituted.

Shey made no motion to insert the eleventh slide in the projector. He said, "Shall we stop here? I think you've got the general idea . . ."

Alar nodded. "Very interesting. What else have you?"

His host hesitated, apparently fumbling with the projector housing. Finally he giggled glassily. "I have some Rorschachs. They're more or less conventionalized but they serve to reveal psychosis in its formative stages."

"If this is tiring you—" began Alar with diabolical tact.

"Not at all."

The Thief smiled grimly.

The cube screen lit up again and the rotund psychologist held a slide up to its light for a lengthy inspection. Then he slid the slide into the projector.

He commented, "To a normal person the first slide resembles a symmetrical silhouette of two ballet dancers or two skipping children or sometimes two dogs playing. Psychotics, of course, see something they

consider fearful or macabre, such as a tarantula, a demoniacal mask or a—"

Alar had smoothly transformed the image into a grinning skull. "Rather like a couple of dancers, isn't it?" he observed.

Shey pulled out his handkerchief and ran it over his face. The second slide he inserted without comment but Alar could hear it rattle as trembling fingers dropped it into the projector.

"Looks rather like two trees," observed the Thief meditatively, "or perhaps two feathers or possibly two rivulets flowing together in a meadow. What would a psychotic see?"

Shey was standing mute and motionless, apparently more dead than alive. He seemed to be aware of nothing in the room but the image within the screen and Alar sensed that the man was staring at it in fascinated horror. He would have given a great deal to steal a look at the creature whose warped mind he was destroying but he thought it best to continue transforming the image.

"What would a madman see?" he repeated quietly.

Shey's whisper was unrecognizable. "A pair of white arms."

Alar reached over, flicked off the projector and screen and stole quietly from the darkened room. His host never moved.

The Thief had not taken two steps down the corridor when a muffled gust of giggling welled out from the closed door—then another and another—and finally so many that they merged into one another in a long pealing paroxysm.

He could still hear it when he turned the corridor corner toward his own stateroom. He stroked his goatee and smiled.

Master Andrews and Florez, who were arguing heatedly over something, passed him without acknowledging his polite bow or even his existence. He watched them thoughtfully until they turned the corner and vanished. Theirs was the ideal state of mind—to be mad and not know it. Their staunch faith in their inevitable destruction clothed them in an aura of purposeful sanity.

Without that faith their mental disintegration would probably be swift and complete. Undoubtedly they would prefer to die rather than to leave the station alive at the end of their shift.

He wondered whether Shey would make an equally dramatic adjustment to his new-won madness.

CHAPTER XVII

Duel Ended

THE racing of his heart awoke him a few hours later in his room.

He listened tensely as he rose from his bunk. But there was no sound, other than the all-pervasive rumble of the vast and frenzied gases outside.

He dressed quickly, stepped to the door opening into the corridor, and looked down the hall. It was empty.

Queer—usually two or three men could be seen hurrying on some vital task or other. His heart beat was up to one-eighty.

All he had to do was follow his unerring scent for danger. He stepped brusquely into the corridor and strode toward Shey's room. He arrived there in a moment and stood before the door, listening. No sound. He knocked curtly without result. He knocked again. Why didn't Shey answer? Was there a stealthy movement within the room?

His heartbeat touched one-eighty five and was still climbing. His right hand flexed uneasily. Should he return for his saber?

He shook off an impulse to run back to his room. If there was danger here at least it would be informative danger. Somehow, he doubted that a blade would influence the issue. He looked around him. The hall was still empty.

The preposterous thought occurred to him that he was the only being left aboard. Then he smiled humorlessly. His fertile imagination was becoming too much even for himself. He seized the panel knob, turned it swiftly, and leaped into the room.

In the dim light, while his heartbeat soared toward two hundred, he beheld a number of things.

The first was Shey's bloated, insensate face, framed in curls, staring down at him about a foot beneath the central ceiling lamp hook. The abnormal protrusion of the eyes was doubtless caused by the narrow leather thong that stretched taut from the folds of the neck to the hook. To one side of the little man's dangling feet was the overturned projector table.

Beyond the gently swaying corpse in front of the cube screen Thurmond sat quietly, studying Alar with enigmatic eyes. On either

side of the police minister a Kades gun was aimed at Alar's breast.

Each man seemed locked in the vise of the other's stare. Like condenser plates, thought Alar queerly, with a corpse for a dielectric. For a long time the Thief had the strange illusion that he was part of a tri-di projection, that Thurmond would gaze at him with unblinking eyes forever, that he was safe because a Kades cannot really be fired in tri-di projections.

The room swayed faintly under their feet as an exceptionally violent and noisy swirl of gas beat at the solarion. It aroused them both from their paralytic reveries.

Thurmond was the first to speak.

"In the past," came his dry, chill voice, "our traps for you were subject to the human equation. This factor no longer operates in your favor. If you move from where you now stand, the Kades will fire automatically."

Alar laughed shortly. "In times past, when you were positive you'd taken adequate precautions in your attempts to seize me, you were always proved wrong. I can see that your comrade's suicide has shaken you—otherwise you would have made no attempt to explain my prospective fate. Your verbal review of your trap is mainly for your own assurance. Your expectation that I will die is a hope rather than a certainty. May I suggest that the circumstances hold as much danger for you as for me?"

His voice held a confidence he was far from feeling. He was undoubtedly boxed in tell-tale devices, perhaps capacity condensers or photocell relays, that activated the Kades. If he leaped at the man he would simply float to the floor—a mass of sodden cinders.

Thurmond's brows contracted imperceptively. "You were bluffing, of course, when you suggested the situation contained as much danger for me as for you, since you must die in any event, while my only sources of personal concern are the general considerations of danger aboard a solarion and interference from the crew.

"I have minimized the latter possibility by transferring to Mercury all but a skeleton crew—Miles' shift. And they're alerted to signal the *Phobos* and leave with me as soon as I return to the assembly room, which will be in about ten minutes." He arose almost casually, edged around the nearest Kades and sidled slowly along the wall toward the cor-

ridor panel, carefully avoiding the portion of the room covered by the guns.

Thurmond had demonstrated once again why Haze-Gaunt had invited him into the wolfpack. He relied on the leverage of titanic forces when he had difficulty in disposing of an obstacle and damned the cost.

IT WAS utterly simple. There would be no struggle, no personal combat. No immediate issue would be reached. And yet, within a satisfactorily short time, Alar would be dead. He couldn't move without triggering the two Kades, and there would be no one left to free him. The solarion would be evacuated within a few minutes. The crewless station would slide over the brim of the sun spot long before he would collapse from fatigue.

The wolfpack was willing to exchange one of its six most valuable munition factories for his life.

And yet—it wasn't enough. The Thief was now hardly breathing, because he believed he knew now what Miles and Florez had been discussing in the hall.

Thurmond was now at the panel, turning the knob slowly.

"Your program," said Alar softly, "is sound save in one rather obscure but important particular. Your indifference to Toynheean principles would naturally blind you to the existence of such factor as 'self-determination in a society.'"

The police minister paused the barest fraction of a second before stepping through the panel.

The Thief continued, "Can you make sense out of a Fraunhofer report? Can you operate a lateral jet motor? If not you'd better deactivate the Kades because you're going to need me badly, and very soon. You'll have no time to signal the *Phobos*."

The police minister hesitated just outside the door.

"If," said Alar, "you think the skeleton crew under Miles is in present control of the station, you'd better take a look around."

There was no answer. Thurmond evidently thought that one would be superfluous. His footsteps died away down the hall.

Alar looked up quizzically at Shey's gorged and popeyed face, then at the two Kades. "He'll be back," he murmured, folding his arms.

And yet, when he heard the footsteps returning considerably faster than they had

departed, this confirmation of his surmise concerning Andrews' crew threw him into a deep gloom. However, it had been inevitable. Nothing could have saved them after he threw the seven.

Thurmond walked quickly into the room. "You were right," he said. "Where have they hidden themselves?"

"They're in hiding," replied Alar without expression, "but not in the way you think. All ten of them were certain they were going to die on this shift. They had a fatalistic faith in their destiny. To return safely with you would have meant giving up that faith with consequent mental and moral disintegration. They preferred to die. You'll probably find their bodies in the muriuum holds."

Thurmond's mouth tightened. "You're lying."

"Having no historical background you would naturally assume so. But regardless of what happened to Miles and his crew you'll have to come to some decision about me within the next minute or two. We've been adrift in the Evershed zone ever since I entered the room. You can release me in order to let me have a try at the lateral jets or you can leave me here—and die with me."

He watched the inward struggle in the police minister. Would the man's personal loyalty to Haze-Gaunt or perhaps a chill adamantine sense of duty require him to keep Alar immobilized at the cost of his own life?

Thurmond toyed thoughtfully with the pommel of his breast dagger. "All right," he said finally. Passing behind the Kades, he snapped the switches on each. "You'd better hurry. It's safe now."

"Shey's scabbard and blade are on the table beside you," said the Thief. "Give them to me."

Thurmond permitted himself a smile as he handed over the saber. Alar knew the man planned to kill him as soon as the station was safe again and that it mattered little to the greatest swordsman in the Imperium whether the Thief were armed.

"One other question," insisted the Thief imperturbably as he buckled the scabbard to his belt. "How did you and Shey know where to find me?"

"The Microfilm Mind."

It was incomprehensible. The Mind alternately condemned him and delivered him. Why? Why? Would he never know?

"All right," he said shortly. "Come along."

Together they hurried toward the control room.

AN HOUR later they emerged, perspiring freely.

Alar turned and studied his arch-enemy briefly. He said: "Obviously, I can't permit you to signal the *Phobos* until my own status has been clarified to my satisfaction. I see no particular advantage in delaying what has been inevitable since our first meeting." He drew his saber with cold deliberation, aware that he hoped his measured certainty would create an impression on Thurmond.

The police minister whipped out his own blade with contemptuous lithereness. "You are quite right. You had to die in either event. To save my life I justifiably relied on your desire to prolong your own. *Die!*"

As in many occasions in the past when death faced him, time began to creep by the Thief, and he observed Thurmond's cry of doom and simultaneous lunge as part of a leisurely acted play. Thurmond's move was an actor's part to be studied, analyzed and constructively criticized by responsive words and gestures of his own, well organized and harmoniously knit.

He knew, without reflecting on the quality of mind that permitted and required him to know, that Thurmond's shout and lunge were not meant to kill him, Thurmond's *fleche* was apparently, "high line right," which, if successful, would thrust through Alar's heart and right lung. Experts conventionally parried such a thrust with an ordinary *tierce* or perhaps a *quinte* and followed with a riposte toward the opponent's groin.

Yet there had been a speculative, questioning element in Thurmond's cry. The man had evidently expected the Thief to perceive his deceit, to realize that he had planned a highly intricate composite attack based on Alar's almost reflexive response to the high-line thrust, and the skilled Thief would be expected to upset a possible trap by the simple expedient of locking blades and starting anew.

This analysis of the attack was plausible except for one thing: Thurmond, never one to take unavoidable risks, instead of unlocking blades, would very likely seize his breast dagger and drive it into his opponent's throat.

Yet the Thief could not simultaneously cut the dagger scabbard away and avoid the lunge.

Then suddenly everything was past. Thurmond had sprung back, spitting malevolently, and the dagger scabbard was spinning crazily through the air behind him. A streak of red was growing rapidly along the Thief's chest. The police minister laughed lightly.

Alar's heart was beating very fast—just how fast he did not know—pumping its vital substance through the deceptively simple cut in his lung. It couldn't have been helped. Now, if he could maim or disarm Thurmond fairly quickly he might still summon the *Phobos* and escape under the protection of Captain Andrews before he died of loss of blood.

His skilled opponent would play for time, of course, observing him closely, watching for the first sign of genuine faltering, which might be merely a shift of the thumb along the foil-grip, a thrust parried a fraction of an inch in excess, a slight tensing of the fingers of the curved left hand.

Thurmond would know. Perhaps this was the enlightening death which that recondite sphinx, the Microfilm Mind, had predicted for him.

Thurmond waited, smiling, alert, supremely confident. He would expect Alar to burst forward every nerve straining to make the most of the few minutes of strong capable fencing remaining to him before he fainted from loss of blood.

The Thief moved in and his sword leapt arrowlike in an incredibly complex body feint. But his quasi-thrust was parried by a noncommittal quasi-riposte, almost philosophical in its ambiguity. Its studied indefiniteness of statement showed that Thurmond realized to the uttermost his paramount position—that a perfect defense would win without risk.

Alar had not really expected his attack to draw blood. He merely wanted to confirm in his own mind that Thurmond realized his advantage. Most evidently he did. Simultaneously with this realization the Thief, instead of improvising a continuation of the attack, as Thurmond must expect, retreated precipitously, coughed and spat out a mouthful of hot, salty fluid.

His right lung had been filling slowly. The only question was, when should he cough and void the blood? He had chosen this moment. His opponent must now take the

initiative and he must be lured into overextending himself.

Thurmond laughed soundlessly and closed in with a tricky leg thrust, followed immediately with a cut across the face, both of which the Thief barely parried. But it was clear that Thurmond was not exerting himself to the fullest. He was taking no chances, because he need take none.

He could accomplish his goal in good time simply by doing nothing, or quickly if he liked, by forcing the Thief to continuous exertions. Thurmond's only necessity was to stay alive, where Alar must not only do that, but must disable his opponent as well. He could not attempt more. His oath as a Thief forbade his killing an officer of the Imperium even in self defense.

WITHOUT feeling despair he felt the symptoms of despair—the tightening of the throat, the vague trembling of his facial nerves, an overpowering weariness.

"To avoid capture or death in a situation of known factors," mocked Thurmond, "the Thief will introduce one or more new variables, generally by the conversion of a factor of relative safety into a factor of relative uncertainty."

At that moment Alar plumbed to the depths this extraordinary character who commanded the security forces of a hemisphere. It was a blazing, calculating intelligence that crushed opposition because it understood its opponents better than they did themselves, could silently anticipate their moves and be ready—to their short-lived astonishment—with a fatal answer.

Thurmond could quote the *Thief Combat Manual* verbatim.

Alar lowered his blade slowly. "Then it is useless to proffer my weapon in surrender, expecting you to reach for it with your left hand—"

"—and find myself sailing over your shoulder. No thanks."

"Or 'slip' in my own blood—"

"—and impale me as I rush in to finish you."

"And yet," returned the Thief, "the philosophy of safety-conversion is not limited to the obvious rather sophomoric devices that we have just discussed as I shall shortly demonstrate." His mouth twisted sardonically.

But only the wildest, most preposterous demand on his unearthly body would save him

now. Furthermore, the thing he had in mind required that he be rid of his saber, yet safe from Thurmond for at least a moment or two.

His blade skidded across the plastic tiles toward Thurmond, who stepped back in unfeigned amazement, then tightened the grip on his own weapon and moved forward.

"The sacrifice of safety is my means of defense," continued Alar unhurriedly. (Great galaxy! Would the man never stop?) "I have converted it into a variable unknown, for you are suspicious of what I shall do next. Your steps are slowing.

"You see no good reason why you can't kill me now, very quickly, but you have—shall we say, buck fever? You are curious as to what I could accomplish without my weapon that I could not accomplish with it. You wonder why I am repeatedly flexing my arms and why I do these knee bends.

"You are certain you can kill me, that all you need to do is approach and thrust your blade home. And yet you have stopped to watch, consumed with curiosity. And you are just a little afraid."

Stifling a cough, the Thief stood erect and closed his fists tightly. There was a dry crackling sound about his clothing as he crossed the brief intervening space toward Thurmond.

The police minister was breathing with nervous rapidity but stood firm.

"Don't you realize, Thurmond, that a man capable of reversing the visual process by supplying his retinal web with energy quanta can, under stress, reverse that process? That instead of furnishing electrical potential differences along afferent nerves for normal muscle activation, he can reverse the process and cause the muscles to store considerable wattage for discharge through the nerves and out the fingertips?

"Did you know that certain Brazilian eels can discharge several hundred volts—enough to electrocute frogs and fish? At my present potential I could easily kill you but I intend to simply stun you. Since electrostatic charges escape easily from metal points, you will understand why I had to throw away my saber, even at the risk of your running me through before I could build up the necessary charge."

Thurmond's blade flew up. "Come no closer!" he cried hoarsely.

The thief paused, his bare breast six inches in front of the wavering point. "Metal

is an excellent conductor," he smiled, and moved in.

The police minister jumped back, gripped his saber like a lance, took split-second aim at Alar's heart and—

Fell screaming to the floor, his writhing body wrapped in a pale blue glow. He managed to pull his pistol from its holster and to fire two shots that bounced harmlessly from Alar's Thief armor.

Then there was a brief panting pause while he glared insanely upward at his extraordinary conqueror.

The third shot went into his own brain.

Alar had bounded into the control room before the echo of the final shot died away. Their fight had lasted nearly forty minutes. How far had the solarion drifted?

The pyrometric gauge read 4,500 K. The temperature drop from the 5,700 degrees K of the photosphere definitely placed the solarion position in the coldest part of the sun spot—its center.

Which meant that the station must have been falling for several minutes, straight toward the sun's core.

CHAPTER XVIII

Death Impending

"ONE hour ago," said the Microfilm Mind, "their excellencies the Imperial ministers propounded a remarkable interrogatory, with the unusual requirement that I give satisfactory answers before the night is out, or die."

From where she sat with manacled ankles Keiris examined the faces in the semicircle about her. Some were grim, some nervous, some unperturbed. With the exception of Shey and Thurmond, the whole inner council was here. In the center of them all Haze-Gaunt, his tarsiod pet peeping fearfully over his shoulder, studied with sunken eyes the man in the transparent dome.

Even Juana-Maria was present, following the proceedings with languid curiosity from her motorchair. The Ministers of War, of Airways, of Nuclear Energy were bunched together at one end of the circle. They had been arguing in heated whispers, but sat up quickly when the Microfilm Mind began to speak.

"These questions are as follows," droned the Mind. "First, were Shey and Thurmond successful in killing Alar, the Thief? If so, why have they not been heard from? Second, can Operation Finis be initiated with reasonable hope of success, even though the Alar question remains unsettled? These two questions were submitted by every member of the Council, I believe. The third question—'Is Kennicot Muir alive?' —was asked by the chancellor alone."

An icy tingle began to crawl up Keiris' spine. Did the Mind really know about Kim—and Alar?

The man in the pit paused briefly, lowered his disfigured leonine head, then looked up again at the circle of faces above him. "I am able to answer your questions as follows. First—Shey and Thurmond are dead as a result of their respective attempts to destroy Alar.

"Second—the success or failure of Operation Finis is no longer dependent on the life or death of Alar but upon an extraneous factor that will be revealed to us all within a few minutes. Thus the first two questions are answerable categorically. However, the queries concerning the existence or non-existence of Alar and Muir can be answered only in terms of non-Aristotelian probabilities.

"With the exception of her imperial majesty, all of you have spent your Aristotelian lives under the impression that 'x' is either 'A' or 'not-A.' Your conventional education has limited you to bidimensional, planar Aristotelian syllogistic classification."

"I don't follow," said Eldridge, War Minister, bluntly. "What is a planar definition and what has it to do with the existence of—well, say Muir or Alar?"

"Get out your notebook and we'll draw pictures." It was Juana-Maria's dry, mocking voice. She rolled her motor-chair over to him. The man pulled a leather-bound pad from his pocket somewhat hesitantly.

"Draw a circle in the middle of the sheet," directed Juana-Maria.

The mystified militarist did so. The ministers nearby craned their necks toward the pad.

"Now consider the question. Is Alar alive? As an Aristotelian you would consider only two possibilities. He's either alive or he's dead. Thus you may write 'alive' in the circle, and 'dead' in the space outside the circle. 'Alive' plus 'dead' then totals what

the Aristotelians call a 'universe class.' Go ahead—write them in."

Eldridge, looking a little foolish, did so.

The ironic voice continued. "But the dead' portion of the card, you must remember, is defined only negatively. We know what it is not, rather than what it is. If there are other conditions of existence than those we are accustomed to, that portion of the card will include them. The uncertainties are infinite.

"And further, the sheet of notebook paper may be considered as a mere cross section of a sphere encompassed by infinity. Above, below, and at angles through it are similar cross sections in the same sphere—an infinity of them. That is to say, by your very attempt to reduce a problem to only two alternatives, you endow it with an infinity of solutions."

Eldridge's face had set stubbornly. "Intending no disrespect, your majesty, may I submit that such considerations are mere academic theorizing? I maintain that these two enemies of the Imperium are either alive or dead. If alive they must be captured and destroyed. With your permission, your majesty, I will restate the question which was heretofore before the Mind only by implication." He addressed the man under the dome coldly. "Is Alar, the Thief, alive?"

"Tell him if you can, then, Mind," said Juana-Maria with a bored wave of her wrinkled hand.

"In null-Aristotelian terms," replied the Mind, "Alar is alive. However, he has no existence in a planar Aristotelian hypothesis, as understood by Marshal Eldridge. That is to say, there is no person in the solar system today fitting the fingerprints and eyeball capillary patterns in Alar's police file."

"The same, I presume, is true for Kennicot Muir?" asked Haze-Gaunt.

"Not precisely. Muir's identity is more diffuse. If viewed in Eldridge's classic logic, Muir would have to be considered as more than one man. In null-Aristotelian terms, Muir seems to have developed a certain mobility along the time axis."

"He might exist as two persons at once?" asked Juana-Maria curiously.

"Quite possibly."

KEIRIS listened to her own strangled voice. "Is he—is either of those persons—in this room—now?"

The Mind was silent for a long time. Finally he turned great sad eyes up to her. "Madame's question is surprising in view of the obvious danger to her husband if her surmise proves correct. One embodiment of Muir, whose existence has just been deduced by her majesty the Imperatrix in the exercise of null-Aristotelian logic, is present, but does not at the moment choose to be visible to us."

He paused and glanced at the radiochron on the wall at his left. Some of the others followed his gaze.

It was four minutes after midnight. Somewhere far above them a new day was dawning—July 21, 2177.

"However," continued the Mind, "Muir is also present in another, entirely different form, one that would be satisfactory even to Marshal Eldridge."

The ministers exchanged startled, suspicious glances.

Eldridge sprang to his feet. "Point him out!" he cried.

"The Minister for War," observed Haze-Gaunt, "is strangely naive if he thinks the Mind is going to point out Kennicot Muir to this assembly."

"Eh?" said Eldridge. "You mean he's afraid to name him?"

"Perhaps; perhaps not. But let us see what a highly direct and specific question will bring." He turned toward the Mind and asked softly, "Can you deny that you are Kennicot Muir?"

* * * * *

As Alar's stunned eyes watched the pyrometer the needle began slowly to creep up the scale, recording the fall of the station into the sunspot vortex—4,560, 4,580, 4,600. The deeper, the hotter. Of course, the station would never reach the sun's core. The vortex would probably narrow to nothing within a thousand miles or so, in a region deep enough to have a temperature of a few million degrees. The solarion's insulative-refrigeration system could stand a top limit of 7,000.

The possibilities were several. The spot vortex might extend deep into the sun's core, with its temperature of some twenty million degrees. But even if the vortex gas stayed under 7,000 degrees all the way to the center—and he knew it could not—the station would eventually crash into the

enormously dense core and burst into incandescence.

But suppose the vortex did not extend to that incredibly hot center, but, more probably, originated only a few thousand miles down? He spit out a mouthful of blood and calculated rapidly. If the spot were 16,000 miles deep the temperature at the cone apex would be a little below 7,000.

If the station could float gently to rest there he might live for several hours before the heavy plant sank deeply enough to reach an intolerable temperature. But its landing wouldn't be gentle. The station was now falling under an acceleration of twenty-seven gravities, and would probably strike the bottom of the cone at a velocity of several miles a second despite the viscosity of the spot gases. Everything about him would instantly disintegrate.

There were, indeed, several possibilities, but their conclusions were identical—a long wait, then an instantaneous, painless oblivion. He couldn't even count on an enduring excruciating pain that might release him along the time axis, as it had done in Shey's torture room.

He became aware of a low, hollow hum, and finally traced it to the pulse at his temple. His heart was beating so fast that the individual beats were no longer detectable. The pulse had passed into the lower audio range, which meant a beat of at least twelve hundred a minute.

He almost smiled. In the face of the catastrophe that Haze-Gaunt was about to wreak on Earth the frenzied concern of his subconscious mind for his own preservation seemed suddenly amusing.

It was then that he noticed that the room was tilted slightly. That should not be, unless the giant central gyro were slowing down. The gyro should keep the station upright in the most violent faculae and tornado prominences. A quick check of the control panel showed nothing wrong with the great stabilizer.

But the little compass gyro was turning slowly, in a very odd but strangely familiar way, which he recognized immediately. The station axis was gradually being inclined at an angle from the vertical and was rotating about its old center in a cone-like path.

The solarion was *precessing*, which meant that some unknown titanic force was attempting to invert it and was being valiantly fought off by the great central gyro.

But it was a losing battle.

HE HAD a fleeting vision of the great station turning turtle in slow massive grandeur. The muirium anti-gray drive overhead, now cancelling 26 of the 27 G's of the sun, would soon be beneath him, and adding to those 27 G's. Against 53 G's he would weigh some four tons. His blood would ooze from his crushed, pulpy body and spread in a thin layer over the deck.

But what could be trying to turn the station over?

The pyrometers showed almost identical convection temperatures on the sides, top and bottom, of the station—about 5,200 degrees. And radiation heat received on the sides and bottom of the plant showed about 6,900, as could be expected. But the pyrometers measuring radiation received on the upper surface of the station, which should not have exceeded 2,000 degrees—since the station surface normally was radiated only by the thin surface photosphere—showed the incredible figure of 6,800.

The station must be completely immersed in the sun. The uniform radiation on all sides proved that. Yet he was still in the sun spot vortex, as shown by the much cooler convention currents bathing the station. There was only one possible explanation. The spot vortex must be returning to the sun's surface through a gigantic U-shaped tube.

Anything going down one limb of the tube would naturally ascend the other limb inverted. The U-tube finally explained why all spots occurred in pairs and were of opposite magnetic polarity. The ionized vortex of course rotated in opposite directions in the respective limbs of the tube.

If the central gyro won out over the torrential vortex the station *might* be swept up the other limb of the following spot twin and he *might* break the station away to safety over the penumbral edge—in which improbable event he could live as long as his punctured lung permitted or until the storage chambers became filled with muirium and the synthesizer began turning the deadly material back into the sun to trigger a gigantic explosion.

But he could be sure that even if the station were found during that interval there would be no rescue. The discovery would be made by Imperial search vessels and the I.P.'s would simply keep the station under observa-

tion until the inevitable filling of the muirium holds.

The brooding man sat in the central operator's chair for a long time until the steepening floor threatened to drop him out of his seat. He rose heavily to his feet and, hanging tightly to the guide rails, walked the length of the panel to a bank of huge enabling switches.

Here he unlocked the safety mechanism of the central gyro switch and pulled it out amid a protest of arcking, hissing flame. The deck immediately began to vibrate beneath him, and the rapidly increasing tilt of the floor made it difficult to stand.

The room was spinning dizzily about him as he lashed a cord to the master switch controlling the outer hatches of the muirium locks overhead. The free end he tied around his waist.

When the station turned on its back he would fall to the other end of the room and the cord attached to his lunging body would jerk open the muirium hatch switch. All the stored muirium would begin to dissolve back into its native energy quanta, the station would suddenly become a flat, gigantic space rocket and—at least theoretically—would be hurled through the rising U-limb at an unimaginable velocity.

If he were human he would be killed instantly. If he were not human, he might survive the fantastic initial acceleration and accompany the station into the black depths of space.

The deck had almost become a vertical wall. The gyro had probably stopped and there was no turning back. For a moment he regretted his decision. At least he could have lived on a little while longer.

Always a little longer. He had squeezed out five years of life by that method. But no more. Sweat squirted from his face as, slipping and sliding, he clawed insanely at the smooth steel tiles of the deck that was now soaring over him to become the new ceiling. Then he dropped straight to what a few minutes before had been the ceiling and lay there helpless under a 53-G gravity, unable even to breathe and swiftly losing consciousness.

He knew vaguely that the rope had pulled the switches to the muirium locks and had then broken under his enormously increased weight—that jagged fragments of his snapping ribs had pierced his heart—that he was dying.

In that instant the muirium caught. Four thousand tons of the greatest energy-giving substance ever known to man collapsed in a millisecond into a titanic space-bending shower of radiation.

He had no sensation of pain, of movement, of time, of body, of anything. But he didn't care. In his own way he was still very much alive.

And he knew who he was and where his destiny lay.

CHAPTER XIX

Armageddon

GODDRARD, Nuclear Minister, was on his feet, staring wide-eyed alternately at the Mind and at Haze-Gaunt. "The Mind—Kennicot Muir? Impossible!"

Phelps of Airways, was gripping the sides of his chair with white, trembling hands and his finger nails were cracking and doubling back from the pressure. "How do you know it's impossible?" he shouted. "The Mind must answer that question!"

Keiris swallowed in an ecstasy of misery. She had precipitated something the Mind might not have been ready for. Thinking back, she could find no good reason for asking her question, other than womanly intuition. But Haze-Gaunt *must* be wrong. Obviously the Mind could not be her husband. They had about the same build but there the resemblance ended. Why, the Mind was—ugly. Then she stole a look at Haze-Gaunt, and lost some of her certainty.

Of the assembly, only the chancellor appeared at ease. He was reclining quietly in his plush chair, his long legs crossed casually. His perfect confidence said plainly—"I am sure of the answer and I have taken extraordinary precautions."

For Eldridge the situation was becoming unendurable. "Answer, damn you!" he cried, drawing his pistol.

Haze-Gaunt waved him back irritably. "If he is Muir, he is also an armored Thief. Put that toy away and sit down." He turned to the Mind again. "The very fact of your delay is highly revealing but what could you hope to gain by it? A few moments more of life?" His mouth warped in the faintest of sneers. "Or doesn't the best-

informed man in the system know who he is?"

Haze-Gaunt's tarsioid peeped trembling over his master's epaulette at the Mind, who had never changed his position. His arms rested on the arms of his chair as they had always rested. To Keiris he appeared almost as calm as usual. But Haze-Gaunt, savoring almost sensuously his victory in a generation-long struggle with the man he hated most, apparently saw something more.

"Before us, gentlemen," he observed grimly, "for all his aura of wisdom, we have a frightened animal."

"Yes, I am frightened," said the Mind, in a strong clear voice. "While we are here playing tag with identities, Toynbee Twenty-one is reeling under its death blow. If you had not forbidden all interruptions of this conference you would know that the Eastern Federation declared war on America Imperial eighty seconds ago!"

What a magnificent bluff! thought Keiris in desperate admiration.

"Gentlemen," said Haze-Gaunt, looking about him. "I trust that all of you appreciated the finer points of the Mind's latest finesse. The riddle of his identity suddenly becomes lost in the excitement of gigantic but fictitious surmises. I think we may now return to my question."

"Ask Phelps about his secret ear receptor," said the Mind coolly.

Phelps looked uncomfortable. Then he muttered: "The Mind's right—whatever he is. I have a hearing aid but it's also a radio. The Eastern Federation actually did declare war as he said."

The queer silence that followed was finally broken by Haze-Gaunt.

"This obviously changes things. The Mind will be placed under close arrest for further examination at our convenience. In the meantime the council is wasting time here. All of you have standing orders for this contingency. You will now carry them out to the letter. We stand adjourned."

He stood up. Keiris forced herself not to collapse as she relaxed.

The ministers filed out hurriedly and their footsteps and nervous whispers died away down the peristyle. The bronze elevator doors began to clang shut.

Then Haze-Gaunt turned abruptly and reseated himself. His hard eyes again fastened on the disfigured but calm face of the man in the domed pit.

Keiris' breathing grew faster. It was not over—it was just beginning.

The Mind seemed lost in a reverie, totally indifferent to the probability of imminent death.

Haze-Gaunt drew a pistol-like thing from his jacket pocket. "This is a poison-dart thrower," he said softly. "The dart can easily penetrate your plastic shell. It need only scratch you. I want you to talk about yourself and to tell me a great deal. You may begin now."

THE MIND'S fingers drummed indecisively on the arm of his chair. When he looked up it was not at his executioner but at Keiris. It was to her that he spoke.

"When your husband vanished ten years ago he told you that he would contact you through me. At that time I was an obscure sideshow freak. Only in recent years have I had access to the vast literature that has brought me to my present preeminent position."

"Might I interrupt?" murmured Haze-Gaunt. "The original Microfilm Mind, an obscure entertainer, had a remarkable resemblance to you. But it so happens that he died ten years ago in a nightclub fire. Oh, I admit that the burn tissue on your face and hands is genuine. In fact, you burned your features deliberately. With the record corrected, pray continue."

Keiris watched in fascinated horror as the Mind licked dry lips.

The Mind said, "My disguise has finally failed, then. But until now, I believe, no one suspected my identity. The wonder of it is that I was not exposed years ago. But to go on—through Keiris I relayed vital information to the Society of Thieves, which I hoped would overthrow your rotten administration and save our civilization. But their gallant efforts are now cut short. The most brilliant minority cannot reform a disintegrating society in a bare decade."

"Then you admit that we have beaten you and your vaunted Society?" demanded Haze-Gaunt coldly.

The Mind looked at him thoughtfully. "Half an hour ago I intimated that Alar had attained a semi-godhood. Whether or not you have beaten me and my 'vaunted Society' depends on the identity of the intelligence we have been calling Alar."

"Don't hide behind words," snapped Haze-Gaunt.

"You may be able to understand me if I put it this way. In the Central Drome of the Airways Laboratories lies the recently completed *T-Twenty-two*, standing by to blast off on its maiden voyage. Five years ago, as you well know, a white-hot space ship crashed into the Ohio River and the River Police found some remarkable things. The metallic parts of the ship were identical in composition with the alloys that Gaines and I had worked out for the *T-Twenty-two*.

"Was the race of a neighboring star trying to reach our sun? We waited for further evidence. It turned up the next day when a man was found wandering along the river bank, dazed, almost naked, carrying a leather-bound book with him. The book bore the gold-stamped legend—*T-Twenty-two, Log*. There is one just like it in the pilot's room of our own *T-Twenty-two*."

"You weave a fine story," said Haze-Gaunt, "but we must cut it short I fear. I wanted real information, not a disjointed fairy tale." He raised the dart-pistol. The tarsiod disappeared screaming down his back.

"That man was Alar the Thief," said the Mind. "Shall I continue or do you wish to try to kill me now?"

Haze-Gaunt hesitated, then lowered the pistol. "Continue," he said.

"We kept Alar under observation in the lodgings of two Thieves, now dead. Always we held before us the possibility that he was one of your spies. The truth of his identity grew upon me only gradually, when no other explanation was possible.

"Let us look at the facts. A ship identical to the *T-Twenty-two* landed on earth five years ago. Yet the *T-Twenty-two* is not due to blast off on its maiden voyage until a quarter of an hour from now. Regardless of any other facts or theory involved the ship will start moving backward in time as soon as it is launched, and will continue to move until it crashes—(should I say 'crashed'?)—five years ago.

"The man who shall become transformed into Alar through a geotropic response or otherwise, and whom we might call Mr. X, will board the *T-Twenty-two* in a few minutes with an unidentified companion, and they will all be carried away in the ship at a velocity faster than that of light. Such velocities require movement backward in time, so that when Mr. X finally pilots the *T-Twenty-two* back to Earth, he lands

five years earlier than when he started. He emerges as Alar and is henceforth irreconcilable as Mr. X."

Haze-Gaunt looked at the Mind, grim-mouthed. "Do I understand that you want me to believe that some one will leave in the *T-Twenty-two* tonight, jet backward in time, crash into the Ohio River five years ago and swim ashore as Alar?"

The Mind nodded.

"Fantastic—yet it has the elements of possibility," mused the chancellor. "Assuming for the moment that I believe you, who is the person who will enter the *T-Twenty-two* and become Alar?"

"I'm not sure," said the Mind coolly. "He is undoubtedly some one in the metropolitan area because the *T-Twenty-two* jets in ten minutes. He might be—you."

Haze-Gaunt shot him a hard, calculating glance.

KEIRIS felt light-headed, dizzy. Haze-Gaunt become Alar? Did that account for her pseudo-recognition of the Thief? Intuitively she rejected the suggestion.

But—

"That hypothesis really becomes intriguing when we examine your relations thus far with Alar," said Haze-Gaunt. "Only a few weeks ago you yourself, with excessive modesty, warned us that Alar was the man most dangerous to the Imperial Government. After his several escapes you told us immediately where to find him and several times, through information you furnished, we nearly succeeded in killing him."

"We might be justified in concluding that you considered Alar a bitter personal enemy, a category that could easily include me—as Alar, of course)—except for a serious difficulty. I have no intention of entering the *T-Twenty-two*. Therefore, I am not your Mr. X, and your motive in persecuting Alar stands unexplained. I must warn you to be explicit." He raised the dart-gun again.

"An old method of teaching children to swim was to throw them in the water," said the Mind.

Haze-Gaunt looked down at him sharply. "You are suggesting that it was your intention to cause Alar to develop his remarkable gifts—whatever they are—by making it necessary that he either discover them or die. Rather a striking educational technique. But why did you suspect that he had

such latent possibilities in the first place?"

"For a long time we weren't sure. Alar seemed just an ordinary man except for one thing—his heartbeat. Dr. Haven reported that Alar's heartbeat rose to the medically-unheard of rate of one hundred and fifty a minute and more in times of danger. I then decided that if Alar were *homo superior* his superiority was latent. He was like a child adopted by a pack of wild animals.

"Unless he were forced to realize his superior origin he would be doomed to run about on his metaphoric all fours for the rest of his life—with us other animals. Yet, if I could get him to his feet, he might point the way out of the devastation that is even now overwhelming us.

"So when, some six weeks ago, you were about to decide on the date of Operation Finis I had to act, possibly prematurely. By means of unusually violent persecution I forced Alar to develop an extraordinary photic ability, whereby he could project a scene in much the same way as a slide projector.

"Later, under the stimulus of ecstatic pain, ably administered by Shey, he became acquainted with the time axis of his four-dimensional body. Unfortunately he was unable to travel in time without this stimulus and I can't say that I blame him for not indulging in the experience voluntarily. Yet it was an accomplishment that he had to master as we master speech—by repetition. I am certain that he finally used it again in the very act of dying on the Solarion Nine.

"I next led Alar first to the moon, where he was forced to learn something of himself and the backward flight of the *T-Twenty-two*, then to the sun station, with Shey and Thurmond on his trail. He had to emerge triumphant and fully enlightened as to his superiority and mission. The alternative was death. I gave him no choice."

Haze-Gaunt arose and began striding up and down the stone flagging, sending his pet into a chattering fright from one shoulder to the other and back again. Finally he stopped and said, "I believe you. Small wonder then that we couldn't kill Alar. On the other hand you too must admit defeat, for your protégé seems to have abandoned both you and your cause."

Somewhere behind him an elevator door opened and shut—and then the sound of running and stumbling feet.

It was the Minister of War, Eldridge. His

uniform was disheveled and it was a darker color at the throat and armpits. Bloodshot eyes punctuated an ashen face.

Haze-Gaunt caught the man as he collapsed. "Speak, damn you!" he cried, holding the shuddering creature under the arms and shaking him.

But Eldridge's eyes merely rolled crazily and his jaw dropped a little farther. Haze-Gaunt let him fall to the floor. The War Minister moaned softly when Haze-Gaunt kicked him in the stomach.

"He was trying to tell you," observed the Mind, "that coastal radar has picked up vast swarms of west-bound rockets. This area will be utterly destroyed to a depth of several miles within five minutes."

Not a muscle in the chancellor's face changed in the long silence that followed. Even the tarsier on his shoulder seemed paralyzed.

They looked like twins, thought Keiris.

CHAPTER XX

The Eternal Cycle

FINALLY Haze-Gaunt said, rather pensively, "It is an occupational risk of the aggressor that the victim may grow impatient and strike the first blow. But this preemption of the initiative is immaterial and actually foolish, for in such event our launching areas are under standing orders to resort to total destruction patterns instead of the one-third destruction originally planned."

"Might I suggest, excellency," came the dry grave voice of Juana-Maria, who had just rolled in, "that Shimatsu has anticipated the scale of your retaliation? That his own destruction pattern for the Imperium is similarly unrestricted?"

Keiris' face slowly grew white as she watched a terrible smile-like thing transform Haze-Gaunt's mouth. But it couldn't be a smile. In the ten years she had known him he had not smiled.

He said, "That, too, was a calculated risk. So civilization must really disappear, as the Toynbeceans have so widely and fear-somely proclaimed. But I shall not remain to mourn over it. And this latest development, I believe, forcibly solves the identity of Mr. X, and hence of Alar."

He turned savagely to the Mind. "Why do you think I permitted you and your Thieves to build the *T-Twenty-two*? Research? Exploration? Bah! The weak, futile human race vanishes but I shall escape and live! And I shall escape beyond my wildest dreams, for I shall become that invincible conqueror of time and space, Alar the Thief!"

He was sneering now at the scarred but peaceful face of the Mind. "What a simpleton you were! I know that you yourself hoped to escape in the *T-Twenty-two*. That's why you had it built. And you even had a passageway, super-secret, so you thought, constructed from your dome to the *T-Twenty-two* hangar. You may be interested to learn, impostor, that the tunnel has been sealed."

"I know it," smiled the Mind. "The 'secret' passageway was merely a decoy. I intend to reach the *T-22* by a much more efficient route. Since you have driven your ablest scientists underground to the Thieves you probably have never had an adequate explanation of Thief armor. It actually consists of a field of negative acceleration and a necessary consequence is its strong repellence of rapidly approaching bodies, such as I.P. bullets.

"You probably know that acceleration is synonymous with space curvature and the alert Haze-Gaunt intellect has now doubtless deduced the fact that this microfilm mechanism before me is actually capable of controlling the space surrounding anyone wearing Thief armor. In an earlier age such a phenomenon might have been called teleportation.

"Haze-Gaunt, I hope that you will not enter the *T-twenty-two*—that you will not become Alar. A few hours ago Alar recovered his memory and is by now completely integrated into an intelligence beyond our conception. If he remembered his past as you humanity has lost its last hope. If he remembered his past as myself I think something still may be salvaged from the mess you have made."

The orange light on the microfilm reader had turned a bright yellow and grew momentarily more luminous.

"The potential stored so far is sufficient to deposit me within the pilot room of the *T-twenty-two*," said the Mind calmly, "but I must wait another thirty seconds, because this time I am taking my wife with me."

He smiled at Keiris, whose soundless lips were forming, "*Kim!*" over and over again.

"There is only one thing remaining, one thing that puzzles me," continued the Mind. "The matter of your tarsier, Haze-Gaunt—"

A low grinding rumble rolled through the room. From somewhere came the crash of falling masonry.

The yellow pilot light on the microfilm machine flickered, then died away.

Keiris stood up in a slowly rising cloud of dust, through which she could see her husband tinkering feverishly with the teleportation machine. Juana-Maria had her handkerchief to her mouth and was blinking her eyes wildly. Haze-Gaunt coughed, then spat and looked about for Keiris. She gasped and hobbled backward a step.

THEN several things happened at once. Haze-Gaunt leaped toward her, tossed her dizzily over his shoulder, then faced Kennicot Muir, who had burst through the door of the plastic dome.

The great man seemed to fill the room.

Haze-Gaunt shrank away, with Keiris on one shoulder and the tarsier on the other. "I'll shoot you if you move!" he shouted at Muir, waving his dart-pistol. He began to back toward the elevators.

Keiris, remembering the deaths of Gaines and Haven, tried desperately to voice a similar warning but her voice was paralyzed. She managed to loosen and drop her right sandal, and the long toes of her right foot were closing around the long knife in her thigh scabbard when Muir replied:

"I am immune to the poison. I developed it myself. Therefore, I will accompany you down your private, battery-operated elevator. I don't believe the others—"

He was interrupted by a high-pitched, terrified chattering. It was the tarsier, who had scrambled down the chancellor's leg and was trying vainly to halt the man by clutching at both legs.

"*Don't go! Don't go!*" it cried in a tiny, inhuman voice.

Keiris heard Haze-Gaunt say something under his breath. His leg flung out. The little animal sailed through the air and crashed into the marbled wall. It lay motionless where it fell, with its body bent backward queerly.

Muir was running swiftly toward them when Haze-Gaunt cried, "Is your wife immune?"

Muir stopped precipitately and Haze-Gaunt, grinning viciously, continued his deliberate retreat toward his elevator door.

Keiris craned her neck from her awkward and painful position and looked at her husband. The anguish on his face turned her heart to water. It was the first time in ten years that his fire-born disguise had relaxed its frozen toneless immobility.

The elevator doors opened. Haze-Gaunt carried her inside.

"It is finished," groaned Muir. "So he is Alar. I let you suffer ten years for this—my poor darling—poor humanity." His voice was unrecognizable.

In her awkward position Keiris could not inflict a vital wound on Haze-Gaunt. She knew then what she must do. The elevator door was closing when she cried, "*He is not Alar!*"—and drove the knife into her heart.

There was a blur of movement. The elevator doors clanged shut, and Juana-Maria was alone in the room.

The three of them, Kennicot Muir, Haze-Gaunt, and Keiris, the living and the newly dead, were joined in their own weird destiny and had left her to hers.

For a long time the fine brown eyes were lost in thought. Her revery was finally penetrated by a shrill painful piping.

The tarsioid, despite its broken back, was still breathing limply and its eloquent saucer-like eyes were turned up pleadingly to her. Their piteous message was unmistakable.

Juana-Maria reached into the side pocket of her chair and found the syringe and vial of analgesic. Then she hesitated. To kill the little beast would perilously deplete the vial. There would be pain enough for herself in the next few hours. Damn Haze-Gaunt anyway. Always bungled his murders.

She filled the syringe quickly, rolled the chair over to the little creature, bent over slowly to pick it up.

The injection was done quickly.

She retracted the needle and the dying animal lay rag-like in her lap, staring at her face with fast-glazing eyes. And then she knew it was dead and that she was exhausted. The titular ruler of one and a half billion souls could not even move her own hands. The syringe dropped to the tiles and shattered.

How easy now to slide into an unwaking revery, forever. So Muir was to become Alar and attain something akin to immortality. That was just. It seemed to her that

the man was simply following a natural development to its logical conclusion. And by the same token Haze-Gaunt would have to change, too.

She wondered what Muir-Alar could do that would avoid Operation Finis. Perhaps he would go back in time and cause Haze-Gaunt to be still-born. But then another dictator, even more ruthless, might arise and destroy civilization. Of course, the god-man might prevent Muir from discovering muirium or even the classic nuclear physicists, Hahn, Meissner, Fermi, Oppenheimer and the rest, from splitting the uranium atom.

But she suspected the discoveries would be made in due time by others. Perhaps the Michelson-Morley experiment which proved the contraction of matter in its line of motion and started Einstein off on his theory of the equivalence of matter and energy could be doctored so that Michelson would actually get the interference image he sought.

But then there would be Rutherford's work on the suspiciously heavy electrons and an infinity of allied research. And human nature being what it was, it would again be just a question of time.

NO, THE main difficulty would be in the mind of man. He was the only mammal hell-bent on exterminating his own species.

She was glad it was not her task to humanize humanity or to be a god-mother to Toynbee Twenty-two.

She peered down at the furry lump in her lap and wondered if Muir had ever divined its identity. Perhaps she alone understood.

The darkened chamber was slowly whirling around and around. She could no longer move her lips. With a great effort she marshaled her last clear thought:

"Poor Haze-Gaunt. Poor tiny animal Haze-Gaunt. To think that *you* always wanted to finish killing *me*."

A moment later the chamber was blasted into dust.

* * * *

The leader, gray, grizzled and cold-eyed, paused and sniffed the air moving up the valley. The old Neanderthal smelled reindeer blood a few hundred yards down the draw and also another unknown smell, like, yet unlike, the noisome blend of grime, sweat

and dung that characterized his own band. He turned to his little group and shook his flint-tipped spear to show that the spoor had been struck. The other men held their spears up, signifying that they understood and they would follow silently. The women faded into the sparse shrubbery of the valley slope.

The men followed the reindeer path on down the gully and within a few minutes peered through a thicket at an old male Eoanthropus, three females of assorted ages and two children, all lying curled stuporously under a windfall of branches and debris that overhung the gully bank.

Blood still drained sluggishly from a half-devoured reindeer carcass lying under the old man's head.

Some sixth sense warned Eoanthropus of danger. He shook his five-hundred pound body and convulsed into a snarling squat over the reindeer, searching through near-sighted eyes for the interlopers. The females and children scurried behind him with mingled fear and curiosity.

"All men are brothers!" shouted the aging Neanderthaler. "We come in peace and we are hungry."

He dropped his spear and held up both hands, palms outward.

Eoanthropus clenched his fists nervously and squinted uncertainly toward his unwelcome guests. He growled a command to his little family, and like shadows they melted up the side of the draw. And after hurling a final imprecation at the invaders, the

old male scuttled up the hill himself.

The hunters watched the group vanish, and then two of them ran toward the reindeer carcass with drawn flint knives. With silent expert strokes they cut away the hind quarters of the animal and then looked up inquiringly at the old leader.

"Take no more," he warned. "Reindeer may be scarce here, and *they* may have to come back or go hungry."

He could not know that the colloidal webs in his frontal lobes had been subtly altered by an inconceivably titanic intelligence. And he could neither anticipate nor visualize the encounter of his own descendants in the distant future with their Cro-Magnard cousins, the tall people who would move up from Africa across the Sicilo-Italian land bridge.

He had no way of knowing that even as he had spared the animal-like Eoanthropus, so would he, Neanderthal, be spared by Cro-Magnon. Nor had he any way of knowing that by offering the open palm instead of the hurled spear he had changed the destiny of all mankind to come. Or that he had dissolved, by preventing the sequence of events that led to its formation, the very intelligence that had wrought this marvelous change in the dawn-mind.

For the entity sometime known as Muir-Alar had rejoined Keiris in a final eternity even as the Neanderthal's harsh vocal cords were forming the cry that would herald the eventual spread of Toynebee Twenty-two throughout the universe:

"All men are brothers!"

NEXT ISSUE'S NOVEL

FIRE IN THE HEAVENS, by GEORGE O. SMITH

NO LUCK? - make a date with

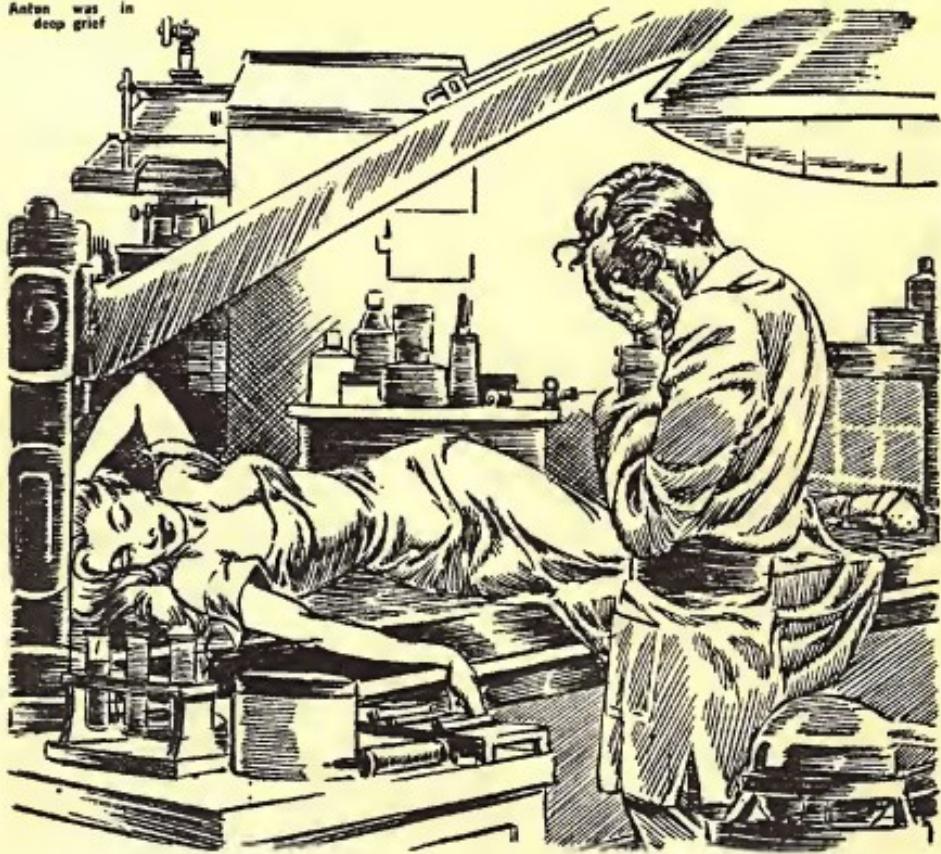
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Aston was in
deep grief



CONQUEST OF LIFE

CHAPTER I

A God Is Born

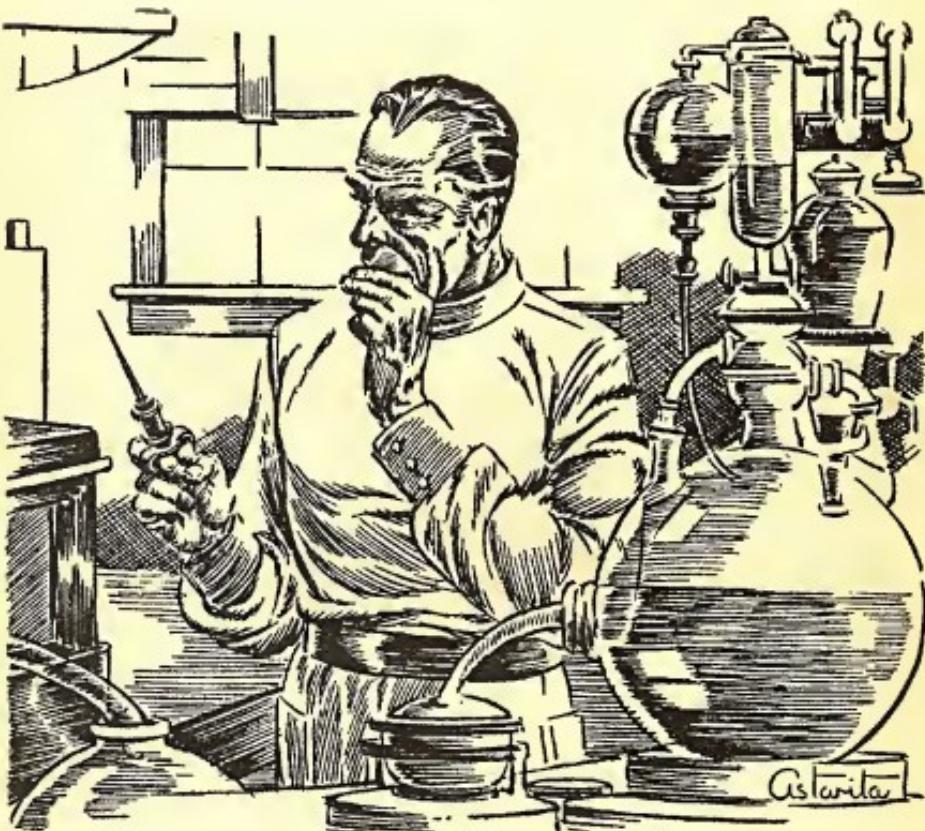
THE latter half of the 19th century was a period of scientific giants—Ramsay, Boquerel, Roentgen, Einstein and others—but history does not mention Matthew York.

While the chemists outdid nature with synthetic products, while the physicists toyed with the amazing electron and the mathematicians groped into eternal secrets of the cosmos, Matthew York searched for a great scientific arcanum.

A brain highly stimulated by chronic hyperthyroidism pushed his investigations ahead in leaps and bounds, but it also burned him out before his time. Long years of intensive search and labor eventually crystallized into results.

Like a pilgrim who at last nears his Mecca, Matthew York knew, at the end, that his fingertips were at the door beyond which lay the secret. He knew at the same time, with resigned bitterness, that he would not live

Anton York inherited the secret of eternal life, and with it the seeds of destruction!



A Hall of Fame Novelet by EANDO BINDER

to open the door more than a crack.

"Give me more years!" he moaned to the Universe at large. "Ten paltry years, and I will give you back a thousand!"

But that was not to be and Matthew York, like Columbus, was to die unknowing that he had reached the shores of a new land, though he had seen them in the distance.

At twenty-five Anton York, the son of Matthew York, was tall, physically perfect, mentally alert, with a budding scientific career already launched. At thirty he was

healthier, if possible, and deep in the intricacies of electromagnetic waves applied to destruction. He sought a weapon so deadly that its use would teach the utter futility of war.

For Anton York had been in the World War. His grim experiences in that inferno of hate had left festering scars on his sensitive mind. He searched with all the passion of a fanatic for a Jovian weapon that would either end civilization or bring it everlasting peace.

STARTLING STORIES

Gradually it became apparent to him that he must be singularly blessed with physical good health. At times he wondered vaguely about it. It was hardly natural. Long hours in the laboratory, weeks of intensive mind-shattering labor, failed to weaken his superb vitality.

At thirty-five he reached his prime, with not a day's sickness behind him since childhood. It was as though some diligent guardian angel kept him free of the diseases that exacted their toll of all others around him. His researches had resulted in the development of a fused beam of ultra-sound and gamma-rays—the long-sought goal.

Yet he did not reveal his discovery. It was too destructive, too likely to bring about chaos. He shelved it in utter secrecy, destroyed all recorded data, kept only the key formula in his mind for future use.

In conjunction with this ultra-weapon he also developed a super-refractive alloy, which he patented for a small fortune. Thereafter he did not have the annoyance of financial insufficiency to hinder his personal researches. He abandoned the academic duties that had previously earned him a livelihood and settled himself in his own laboratory.

At forty-five he had not aged at all, it seemed. He married a young and beautiful girl of twenty-five, one who, instinct told him, would not hold him back in his scientific endeavors. They looked like a well-matched couple of equal age, for York seemed possessed of that elastic youthfulness with which some people are so fortunately endowed. Yet at times he caught himself wondering whether it was fortune or something else.

Ten years of research on liquid and solid rocket fuels had convinced him space travel would not be achieved by that clumsy wasteful means. The answer, if answer there was to be, lay in solving the secret of gravitation.

At fifty-five he had made some steps, purely theoretical, toward the solution, but realized it might take several lifetimes to teach the fundamental basis necessary for an enduring analysis. He was like Anaxagoras, who conceived an atomic theory two thousand years before mankind had had a science capable of testing it.

"Vera," he said to his wife one day as she brought sandwiches to him in his experimental laboratory, "gravitation is like a planetary hypnotism, just as amazingly effective and just as intangible. Just what it is I haven't

yet determined, not even in theory."

"As far as I've gone, it seems to be a directive field of attraction between masses of matter. By direction, I mean radiating from points, rather than just filling space haphazardly, like the cosmic rays. Now there's a strong clue—"

VERA interrupted him. "Yes, dear, but drink your coffee before it gets cold."

"Vera, that clue is a will-o'-the-wisp I've been chasing down for ten years without success," he persisted. "It is very likely to take ten more tens of years. If only I had another lifetime ahead of me."

"To look at you, you have." His wife was not merely flattering him. Her voice was serious, vaguely troubled. "I'm just thirty-five and that's the age you look, yet you are fifty-five."

"I know, I know," murmured York, without elation.

"If it keeps up," Vera's voice wavered, "I'll be looking older than you in a few more years. Everybody comments on your youth, dear. They even call you a Dorian Grey—only in looks, of course, not character. Why, Tony, what—"

York had dropped his sandwich, fingers nerveless. His face was pale.

"If it keeps up!" he cried, repeating his wife's phrase. "If it keeps up!"

"Tony, I don't understand."

"Neither do I," York told her earnestly. "Vera, I haven't spoken much about my childhood, but there's one thing that has haunted my subconscious mind like a vivid dream—the night when my father inoculated me with a solution that made me very ill for a month. It was a glowing liquid, that solution, as if a diamond had been dissolved in it. He called it an elixir."

York's eyes grew misty with past memories.

"My father was a great scientist, greater than the world ever knew. He set himself a goal—the secret of life. He did strange things to mice and fruit flies with his serum. Once he dipped some inoculated mice into a bath of deadly germ-laden fluid. The creatures lived on undiseased."

He sprang up.

"In the name of God, what did his serum do to me? Why should I alone be free of disease. Why do I look like thirty-five at the age of fifty-five? What does it mean? I must find out."

"Find out, but how?" ventured his wife. She was always awed by her husband's immunity to disease and senility but she had trained herself to ignore the subject.

"From my father's diary, perhaps, or from his research notes. My aunt still has his papers. I've neglected to make a careful study of his notes. Now I'm going to make a thorough search for some clue to the mystery!"

CHAPTER II

Life Everlasting

BUT it was not just a clue that York found as he meticulously examined Matthew York's voluminous data. It was the keystone to his quest itself. The entry in his father's diary for the day Anton York remembered so vividly, read in part:

Although it was against my better judgment, some madness seized me this night and I injected 10 c.c. of a 50% water solution of the Elixir (leaf 38A, book G-4) into Tony's left arm. I don't know what the result will be. I just don't know.

No use to curse myself any more. It's done and only the future can give answer. In about six months blood tests of Anton will indicate to what extent the Elixir has taken effect. Its cruder form, when it didn't kill my guinea-pigs, gave the sign of total disease resistance within that period.

So in a half year Tony will either carry blood of high radiogenic capacity or he will be dead. Dear God, not the latter! One thing I cannot get out of my mind is that my Elixir has connections with longevity.

Number 277-B-3 of my guinea-pigs, after inoculation, lived twice the normal span of life. And that was with the crude G-4 Elixir. Is it possible that, in protecting protoplasm from disease by increased energy of radiogens in the body, the Elixir also prevents the decay of vitality? Preserves youth perhaps? If so, what will my Elixir M-7, just perfected, do to my Tony? Increase his life span, perhaps, to—no, I won't speculate. I am a scientist, not a prophet. Yet there must be some factor of longevity in the Elixir.

Longevity!

That word burst like a bomb in Anton York's brain. But he refused to allow his thoughts to carry on a train of speculation. Instead he searched out the leaf 38A, book G-4 mentioned. Crabbed chemical formulae gave a compound labeled: *Grignard Reaction*



SOME stories are forgotten almost as soon as they are printed. Others stand the test of time.

Because "Conquest of Life," by Eando Binder, has stood this test, it has been nominated for SCIENTIFICATION'S HALL OF FAME

and is reprinted here.

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on the chlorinated union of zymase and pituitrin—in Elixir M-7.

Though not acquainted with the more technical phases of organic chemistry, being a physicist, York knew that zymase was an enzyme, a substance which could regenerate itself in the proper environment, though not a living material. A short search in his library gave him an idea of the properties of pituitrin. It was a gland product, controlling growth, keeping it even with the constant tearing down of protoplasm.

Growth and regeneration—Matthew York's formulae seemed to have combined these two biological factors. York puzzled over these for a while, then turned again to his father's diary. There was only one other entry after the one he had read. A month had been left blank. That was the month Anton York had been so ill from the injection. On the eve before his sudden death from heart failure, Matthew York had written:

Little Tony, thank God, is out of danger now. He is resting well, poor boy. I made a blood test today. Nothing definite. There is some slight increase of the radiogen value though. I have just had the thought today that the longevity factor may be due to—simply—increased cosmic ray consumption.

One of the unproven corollaries of the Radiogen Theory is that those invisible bundles of energy derive their power from the cosmic rays which fill every part of the Universe—every nook and corner of it, even the spaces between atoms.

It is so astonishingly logical when one thinks of it. The countless radiogens which exist in and motivate protoplasm—give it "life"—are known to carry within their nuclei tempera-

STARTLING STORIES

tures comparable to those of the stars up to 6,000 degrees centigrade.

Cosmic rays, in turn, are electromagnetic waves of tremendous power and penetration. It is not fantastic to conceive of those constant rays losing their immense power to the radiogens, which are web-traps, like electromagnets.

Now if resistance to disease—and I have almost proved it so—is the electrocution of germs by radiogens which they touch, an increased radiogen-content is a panacea. It has worked with certain of my guinea-pigs, mice and fruit flies. Pray God it works with Tony.

Secondly, if old age is the waning capacity to manufacture radiogens, my Elixir is a drop from the Fountain of Youth, because its constituents are able to procreate themselves in protoplasm indefinitely.

And of course there are my Methuselah fruit flies. A month ago, after inoculating Tony, I segregated those ten insects, gave them the same Elixir M-7, by inhalation, and they are still living, even though I did not feed them.

Normal fruit flies do not live more than fourteen days without food. Still I will not speculate the case of Tony, except to say that if his radiogen-content is more than twice normal, he may well be—immortal! That is simply adding two and two to make four.

I looked long at my boy today, wondering. He doesn't look different nor should he. But he may be—yes, I dare to think it—immortal!

Immortal!

If his radiogen-content was two times normal, he was incapable of dying either from disease or old age, both of which were results of deficiency of radiogens according to the theory Matthew York had followed. Was this why he failed to grow old?

Examinations of various other portions of his father's notes began to convince him it was. For the elder York had specified several times that an organism rich in radiogens and capable of keeping up the abnormal supply, would reach its prime of life and stay there.

GRADUALLY it became clear to Anton York as he read on. Living matter was a complete chemical entity in itself. Its microscopic radiogens were like tiny batteries, which activated it under control, of neuro-impulses from the brain.

The energy of the radiogens came from space, from the stars. When the Universe had been young there had been more cosmic radiation, from the birth-throes of stars. Nature, with such a lavish supply of life-energy, had created a wide variety of life, but each with only enough radiogen-content to animate it properly.

With the waning of the Universe and the

decline of the cosmic radiation Nature had increased the radiogen-content in inverse proportion in order to continue its original cycles of life.

But here was Man stepping in. Here was Matthew York defying Nature, outrunning evolution. Here was Anton York, with a twice-normal capacity for utilizing the life-giving cosmic radiation.

Here was immortality! Because not until the Universe had run down to half its present rate of cosmic radiation would Anton York be included in Nature's immutable laws of the cycles of life.

And that would not be for millions of years!

York grew dizzy with the thought of it.

"Bah!" he said suddenly to himself. "Here I am talking myself into this thing without proof of any sort. I can't be sure that I have more radiogens than normal. I can't know that the Elixir worked on me. I can't even be sure that he succeeded as he hoped with his serum, for he wasn't absolutely certain himself."

This line of thought eventually led him to visit a famous blood specialist for a test. With throbbing heart he waited to hear the result. The doctor finally reported that his blood was quite normal except in one respect—it had a singularly great germ-killing power. Twice as much as normal. He assured York that he would never be ill if his blood stayed that healthy.

York's eyes glowed like ingots of molten metal.

"Then that means my radiogen-content is doubled."

The doctor frowned, then laughed.

"Oh, you mean according to the electromagnetic theory of life? That theory isn't credited, you know. In the accepted parlance your blood simply contains twice as many phagocytes, the germ-killers."

"Radiogens make nice, scientific talk but they don't exist. If they did, life would be a matter of volts and amperes. We would have electrically rejuvenated people walking around and living forever." The doctor laughed heartily. "Think of that."

A paralyzing calm came over York, along with the conviction that the doctor was wrong and his father right. A voice seemed to beat in his brain, telling him that his suspected immortality was not altogether mythical.

"How old am I?" he questioned him.

The doctor looked him over, though surprised at the question.

"I'd say about thirty-two, not more than thirty-five."

"I'm fifty-five," stated York. "And a hundred years from now I'll still be looking thirty-five." He left the gaping doctor, went out into the street. He stared at a tall, sturdy skyscraper.

"You're strong and enduring," he said to it quietly. "You'll last fifty, a hundred years. I'll outlast you and your successors." To the river under the steel bridge he murmured, "Some day you will not exist and I will stand over your dried bed." To the fields he whispered, "You will nurture many, many crop cycles but some day you will be barren. On that day—I will be thirty-five."

Night came and to the bright stars he hurled a challenge—"The eternal stars, eh?"

Hours later, in a rosy dawn, he came to himself. He found himself far out in the country and realized he had been walking in a daze, drunk with the thought of immortality. Vera was waiting for him when he arrived home, tired and muddy.

"Tony! I've been worrying."

York looked at her strangely. A thought struck him, one that had persisted before.

"Yes, I've been worrying too. One little worry stuck with me all during last night, even in the heights of my fancy. That thought is losing you." He pulled her to him suddenly, fiercely. The love he had for her was deep and vital.

"I love you madly," he cried, "but I'll lose you unless—"

Vera's eyes became haunted with fear—fear for his sanity.

"No, dear, I'm all right," York said quietly. "I can't explain now but soon I shall." His eyes shone then. "Soon you and I—together—"

CHAPTER III

The Experiment

"**H**HM, I don't know if I can duplicate it. The main part of the serum is not so intricate but this one ingredient is new to organic chemistry. Look at it. If you know anything at all about my field you'll realize that combining zymase and

pituitrin, a chlorinated enzyme and an acidic gland product, is impossible. I don't think it can be done."

The speaker was Dr. Charles Vinson, a skilled technician of the biochemical sciences. He and York had been acquainted academically twenty years before.

"You must duplicate that serum!" York's voice trembled with desperation. "I can't be as frank about this as I'd like, Dr. Vinson, but the manufacture of that serum means more to me right now than anything in the world. Try it anyway. Work here at my laboratory for a month, a year, and name your price."

"Oh, it is not the money," protested the biochemist. He did not quite mask the inherent cupidity of his nature, however. His eyes gleamed with sudden interest. "It would cost much. Your place here is equipped for electrons and volts, not bacteria and guinea-pigs. I would have to buy much—"

"Then it is agreed," declared York, "At any cost make me ten c.c.'s of this Elixir."

"Elixir!" Dr. Vinson's whole manner changed. "Elixir, did you say? Where did you copy these formulae? What do they represent?"

"Bluntly, none of your business." York could not hide a trace of anger. He had never particularly liked the biochemist. For a moment he was sorry he had picked him. Yet he knew it would be difficult to find a more capable man for the task.

Dr. Vinson shrugged.

York went on, "You will be paid for duplication of the serum, nothing more. Look over this chemical annex to my laboratories. Whenever you are ready come to the library. I'll discuss terms and procedure with you." He wheeled and left.

Dr. Vinson studied the sheet in his hand. It was a typewritten copy of someone's research notes. Whose? What did they represent? An Elixir. Further pondering suddenly enlightened him. Matthew York—Anton York—father and son. Many years before Matthew York had published a short treatise on the secret of life.

He had claimed that an electrical interpretation of life was the only approach to its mystery. It created a small furor and his paper became the forerunner of radiogenic theory. Yet nothing more had been heard of Matthew York.

Except perhaps this—Dr. Vinson held up

the sheet wondering.

That same day York spoke to his wife eagerly. For the first time he explained to her fully the secret of his youth—the immortality of his flesh. She was not so surprised as she might have been.

She caught her breath sharply, though, when he added, "And when Dr. Vinson makes up some of the serum it will be for you! You and I will have each other forever in perpetual youth, in our prime of life!"

She was suddenly in his arms, sobbing. "I will love you for all eternity!"

In the next month York's laboratory became the receiving end of a small caravan of new materials—varieties of chemicals, crates of apparatus, cages of squealing guinea-pigs. For Dr. Vinson had seen at a glance that the serum was not to be an elementary accomplishment.

In another month he had started to gain results. York came often to watch him work. He seldom spoke. His attitude was one of waiting, and impatiently. Sometimes his wife was with him and they would watch together, smiling at one another secretly.

Vinson did not give up trying to draw out York in conversation about this mysterious project.

"York," he complained one day, "there's something missing in the data I'm working on. I'll have to have it all. Where are the original notes?"

"Why do you need them?" York countered hesitantly.

"Because something I need may be in them. Some little thing you neglected to copy but vital to successful duplication. Look at this guinea-pig. The serum killed him, as it has all the others, because it is not the right serum."

YORK faltered. Some instinct had kept him from showing his father's notes up until now, for they dealt with a tremendous thing. Yet he wanted the serum. And because the Infinite did not warn him he yielded. But only the scientific notes, not the diary.

Dr. Vinson's overeager hands leaped the yellowed pages. His eyes glittered first, then narrowed. A pattern was piecing itself together in his mind.

Not many weeks later the biochemist's face was bright with triumph. Together with York he watched the healthy antics of a guinea-pig into whose veins the day before

had been injected an overdose of bubonic plague germs.

"That little animal is germ-proof!" announced Vinson, excitedly. "It has passed the last test. It is immune to any but violent death. We have the same serum now that your father developed."

York turned swiftly.

"My father! How did you know? What—"

"Why beat around the bush, York? Your father developed this serum and tried it on you. It was dangerous, because the serum was fatal half the time. Yet he took the chance, knowing—that if you survived you would be immune to disease." His face changed subtly. "And immortal!"

"Curse you!" cried York, stepping forward.

"Wait, York. I haven't been spying around. The thing stared me in the face. You, who should be as old as I am, fifty-five, look like thirty-five. I can show you a fruit fly that has lived twice its normal span and will continue to live—who knows—through all eternity. It astounded me until I reasoned it out."

York relaxed. After all, it was too tremendous a secret to conceal from the man who had worked with his father's notes. He stared at the biochemist uncertainly. What would this mean?

Dr. Vinson laughed shortly.

"You are an immortal, York. And you love your wife. You want her by your side in the long future that beckons. Hence my work here—to manufacture the Elixir for her. Well, let me warn you—there is an even chance that your wife will not gain immortality but death!"

"I'm going to take the chance," York said. "Prepare a suitable dose for injection. In case of death—"

He made a resigned gesture. "Vinson," he continued solemnly, "you and I share a great secret. The Fountain of Youth! An age-old dream come true. After my wife has been inoculated we'll discuss—many things.

"This Elixir can be a great gift to civilization, to mankind. In my own case it will allow me to finish my researches, to solve the secret of gravitation, which I could not do in one lifetime. But certain problems would arise if the Elixir were given to the world. You can guess them."

Vinson did not answer. His small eyes blazed with the dawning gleam of some stag-

gering idea. York noticed the sudden stiffening of his body, spoke sharply.

"Well?" It was a challenge.

The biochemist's dry lips parted but no sound came. Then with an effort he gasped: "Death! If your wife dies, think of the responsibility, the guilt!"

If York had not been so preoccupied with his own problems, he would have demanded the truth. For Vinson had not spoken what was crawling in his mind—something of far greater significance than the mere fate of one woman.

"The responsibility is all mine," snapped York. "I have her full consent to this. We have also made out a legal document, absolving me from all blame in case of her death under the serum. According to law, this is not contestable in court any more, so long as the parties concerned are mentally sound. You are not an accessory to a crime in any sense, for there is no crime. When can you have the stuff ready?"

"In about three days," answered Vinson, his voice curiously hushed. His face looked fevered—his hand trembled. "You see, I want to do my best with the serum for your wife. Purify it as much as possible. Increase the odds in our favor."

York put a hand on the biochemist's shoulder.

"Come, don't take it so hard," he said, vaguely aware that the man was more than normally moved.

Vinson smiled weakly. York left to tell Vera of the near approach of the great moment when they would look down the interminable hall of the future together. When the door had closed behind him, the biochemist's face gave way to pent-up emotions he no longer had to hide. A twisted smile came over the thin lips that hissed, "*fool!*" in the direction of the vanished York.

IF THERE is some repetitious twist to the working of fate, certainly it became manifest in the events that occurred three nights later. For in broad detail it was the ancient story of eternal love, of Romeo and Juliet, re-enacted.

Tall, handsome, physically perfect, Anton York stood over the body of his wife, his face marked with grief. She lay on a couch, her beautiful face moulded in the peaceful lines of death. Dr. Vinson stood to one side like a dumbfounded Belthasar, breathing

hard. He stared mutely from the hypodermic in his hand to the pair before him.

Just a few minutes before, with York holding his wife's hand, he had injected the serum into her arm. The reaction had been sudden and startling. Her breathing had grown hard, her eyes had flown wide. With a little half sob and half smile to her husband, she had fallen back on the couch. Then came a few racking gasps, after which an ominous stillness had come over her relaxed form.

Vinson dropped the hypodermic and stepped beside the couch. He leaned over to listen for heart beats. Then he looked up.

"Dead!" he whispered huskily. "The odds were not quite even, for her!"

Yvon's face was a blur of overwhelming, repressed despair. Though Vinson had repeatedly warned him that this could be the result he had not been prepared for it. He dashed from the room suddenly without a word.

Alone with the body, Vinson stared at the sweet face somewhat fearfully. It shook his resolve to try the Elixir himself, which was necessary for the furtherance of certain plans he had made. Immortality or death! Was it worth the risk?

York suddenly burst into the room, face pale and desperate. Ignoring the biochemist, he dropped to his knees beside the couch. For a long moment he gazed at the face so death to him. Then with a swift motion he brought one hand up toward his mouth. Vinson caught the glint of glass, uttered a strangled cry.

But it was already done. York gave him a wan smile.

"Cyanide," he whispered. "That is a better Elixir for eternal life." A minute later, he slumped across the body of his wife, pale blue around the lips.

Dr. Vinson gaped at the double tragedy. For a moment he was weak with horror of death. But presently he straightened up, smiled.

"Perhaps it is better this way," he mused. "York might have resisted my plans. He is—was—the altruistic sort. He would not have approved, I'm sure. And I had determined anyway that nothing was to stand in my way."

He laughed shortly. "The fool! With the greatest gift mankind ever had in his hand, he thought only of making his wife immortal. I suppose later he would have envisioned centuries of research for himself—to benefit

mankind. He could not think of the important thing—power! The power of immortality! But I think of it. Yes. First, I'll purify the Elixir further—give myself a greater chance to survive it. Then—"

He broke from a trance, whirled about.

"Got to get out," he told himself. "I must not be connected with this affair. I must be left alone—to think, to plan, to build." He rolled the phrase on his tongue, eyes gleaming with a fanatic fire.

"I'll change my name. Get all my money together and leave the country, perhaps. Build in secret. This marks a new phase in my life and in the history of the world!"

He turned once more to the still forms on the couch. With the sense of melodrama still upon him, he whispered. "We shall meet again soon, in eternal death, or never in an eternity!"

CHAPTER IV

The Immortals

DR. VINSON left and made his way to the laboratory in which he had duplicated the Elixir. Here he heaped all of Matthew York's notes on the floor, set fire to them. In his brain was locked the great secret of the serum.

On sudden thought he took a gallon jar of alcohol and rolled it toward the burning papers. He watched until the heat cracked the glass and sprayed liquid fire over the floor. The flames licked at the wooden work-benches, grew to a vigorous blaze.

Vinson turned away with a dark smile shadowing his face.

"From these ashes will spring my immortal empire!" he cried aloud. Then he left the place.

The eager flames became a yellow holocaust in the big building that housed the laboratory and home of Anton York. But fate had not played out its re-enactment of history's Romeo and Juliet. In the room where a double tragedy had seemed to occur there was a stir of life.

Vera opened her eyes and struggled to sit up on the couch. Her husband's body slid away, fell to the floor gently. Her horrified eyes saw this and with a scream of terror she fell back again pale as death.

But it was not the dagger-death of Juliet. She had only fainted. When York opened his eyes a moment later, his mind was an aching blank. A rush of memory brought him to his feet with a groan. He stood there a moment, trying to fathom his escape from death.

He could not know that the same super-electrical quality of his flesh which resisted disease and supplied the energy of youth was also able to fight the fatal fire of life-poisons with its own youth-fires.

A thick cry of unbelief escaped him as he saw that his wife was breathing. There were two fevered spots of red on her marble cheeks. Death had passed them both by! Again it was an enigma to him that the powerful serum, producing a temporary coma like that before death, had finally eased its stricture of the heart and lungs and allowed life to continue in her body.

A curl of smoke under the door warned York of the danger. He swung it open and as quickly closed it as a cloud of smoke swept into the room. He picked up his wife in strong arms and ran from the building. There was a faint dismay in his heart over the loss of the laboratory, a far greater joy that they were alive. And alive as immortals, both of them!

A month later, in a hospital, York's tired eyes lit up happily.

"The danger is over, Vera," he told her. "You went through the same period of illness that I did when my father gave me the serum as a child. It's like the fevers that follow vaccination. But it's over now and you and I together can look down the centuries!"

Three months after this, in a hotel, Vera asked about Vinson.

"Dr. Vinson disappeared in the fire," York told his wife. "I'm worried about him. I can't rest until I know where he is. He alone has my father's secret—the original notes were destroyed, together with all copies. What is he doing with the Elixir? I can't help feeling concerned, because he is not the man to use such a thing wisely."

A year later he said resignedly, "I guess there's no use to hunt for him further. I've employed the most expert detectives but they've found no trace. Wherever Vinson has gone he's covered his trail completely. And that's ominous. Again, he may have tried the serum and died from it. I wish I could hope that."

Two years later York proudly surveyed his new laboratories, located in a remote part of a mountain region. It was made possible by one of his inventions. A large industrial concern had patented his super-magnet, a by-product of his previous researches in gravitation.

"Here," he predicted, "I shall solve the secret of gravitation."

FIVE years later he had come to the conclusion that gravitation exhibited lines of force, much like a magnet.

"What is wrong with the analogy of converting kinetic motion into electricity by cutting the lines of magnetic force?" he asked himself. "If the field of gravitational force is similarly cut—yes, but with what?"

Ten years later he frowned at a new snag in his researches.

Ten years after that, with careful planning, he and Vera changed their names to circumvent explaining their permanent youth.

A decade later they had achieved a harmony of continued existence and mortality seemed a dream in their past.

Time swept by. Its rolling pace did not change the couple in their mountain laboratory-home. They were still thirty-five in appearance and vigor. They lived in a state of detachment from the rest of the world.

From the sidelines they watched the kaleidoscopic march of events, the unfurling of history. Strikes, famines, elections, social changes, shifting national boundaries, new inventions—their televisor kept them informed.

York's experiments took him into a field wholly untouched—the phenomena of the gravitational lines of force. A field as untouched as the electromagnetic scale before Newton and his successors explored it. It had taken over two centuries and a host of diligent savants to understand radio waves and cosmic radiations, the limits of that field. York labored to explore his field alone and in less than two centuries.

In a way York was equal to a line of scientists following one goal. Each time he reached some hiatus and had to branch away he was like a new worker taking up the work another had left in death. And he had the advantage of always being in perfect condition, physically and mentally.

Thus it was, that a task that would normally have required all of a thousand

years of science fell before his irresistible onslaught. He called his wife in excitedly one day.

"I've cut the force-lines of gravitation," he sang triumphantly. "I use light beams, curved ones, for the energy source. I feed them into the quartz coils, like electricity in a helix of copper wire, to create a magnetic field.

"A magnetic field is used in opposition to another magnetic field to produce kinetic motion. My quartz field produces a gravitational field, in opposition to Earth's gravity, to produce kinetic motion. Unlimited kinetic motion—direct from Earth's gravitational field!"

York's voice became a paean of enthusiasm.

"It is the answer to space-travel, if I can refine my apparatus to the point where a single beam of direct sunlight will actuate my quartz rotors. I must also make a sun-changing battery to spin the rotors, so that a ship in space will need only the perpetual sunlight to motivate it. Vera, I am close!"

Close, yet it took another quarter century to achieve it. It was almost a hundred years after the inoculation of Vera that York gave his ship its first tryout. It was a ten-foot globe of light metal, set with several thick quartz port-windows.

Two large convex mirrors at the top were arranged to feed sunlight to knobs of sensitive selenium. Some miracle of York's science compelled the sun's radiant energy to pour into the ship like water into a funnel.

It handled awkwardly at first, until York got the feel of changing his artificial gravity fields. Then he was able to whisk the heavy globular ship about with flashing speed. It looked like a bright steel bomb from some giant cannon.

He leaped out of its hatchway, panting, after landing.

"I can't tell you how excited I am over this," he told his wife. "Think of it. We can stock the ship with necessities and go out into space, explore the other planets!"

They made a trip to the Moon and back that same year. From this experience York was able to refine his apparatus still more. They made a trip to Mars and to Venus. He began planning a trip to another star.

This would require a larger ship for supplies and motors to be run by starlight and tenuous mid-void gravitational forces. He began its construction. If his gift to im-

mortality had made him feel like a god, this ability to explore the ether was still more of a God-given attribute.

He opened his eyes one day to realize he had been drunk with these things, as he had been with the first realization of immortality. Earnestly, then, he sat down to write out the complete plans for his anti-gravity unit. He would send this to every scientific institution of the world.

IT WAS just before he had finished the long and complicated paper that Vera called his attention to startling news over the radio. All during the past year there had been mysterious invasions in outlying sections of the world—mysterious, but unimportant in that they involved obscure regions.

The invaders had always come in small, swift ships, equipped with incredibly destructive weapons. Many garbled reports had been received from places invaded though no one seemed to know just who or what was responsible.

But this night, the news was alarming.

"Rome has just undergone a terrific bombing by a mysterious fleet of small, fast aircraft," an excited announcer told the world. "They may be the same ones that have been terrorizing Earth in the past year. All the world is aroused. What nation has done this cowardly thing, attacking without warning?"

York's eyes reflected again the emotions that had haunted him in the World War.

"Haven't they had enough of it?" he cried. "They fought like beasts for a decade just thirty years ago. I was tempted then to reveal my superweapon and let them butcher one another to nothingness. I am tempted now."

The next day Berlin was bombed. And in the following days, Paris, London and Moscow. The world gasped. What mad nation was challenging all Europe? Tokyo was bombed and then Washington. What power was challenging the whole world? A new note of terror arose when a gigantic fleet, composed of mixed Italian and German aircraft was annihilated by fifty small ships of the invaders. The enemy seemed to have some long-range weapon that made victory ridiculously easy.

York waited for the unknown power to declare itself. Then he would act. After the succession of bombings, which had not been very destructive and had evidently been an

exhibition of power, there was a lull of a day, then news that set the world on fire."

"The enemy had finally announced itself," blared the televiser. "This afternoon a powerful radio message was picked up at many official stations. The invaders that have bombed the world's most important cities call themselves The Immortals.

"They demand a parley of all important nations, at which The Immortals are to be accepted as the sole government on earth. In plain words The Immortals, whoever they are, demand world dominion. This, or the threat of continuous bombing and destruction by their invincible fleet of fifty ships."

Then York knew. He and Vera looked at one another.

"Dr. Vinson!" gasped York. "Dr. Vinson and a band of ruthless demons bent on conquering Earth! For a hundred years he planned this. I did not think he would go to such lengths. In some hidden spot he and his crew, all immortals, must have labored for this day."

"Undoubtedly they are all scientists and technicians. Men who in a century's time could do miracles in discovery. Vastly improved ships, super-weapons, carefully laid plans. They played for big stakes and made preparations in a big way."

He turned his anger on himself.

"Why didn't I see it before this? It's all so clear now. In the past year they carried out experimental raids to gauge their power and readiness. I should have suspected, and prepared. Now they have struck and the end will be soon. True scientific warfare against the world's tremendous, but clumsy armament—the wasp against the bear. It can sting again and again, too quick and small to be crushed by might."

Again news came over the televiser indicating the crisis which faced the world. A hastily and secretly formed armada of the world's best fighting craft—of every large nation—had massed and challenged The Immortals. The challenge had been promptly accepted. The incredible story told by gasping announcers was that by sheer weight of numbers the fleet had succeeded in downing three of the enemy, while they themselves were cut to one-third their strength. The remnant had fled.

Vera was alarmed by the sickly gray color of York's face as he heard this.

"I'm responsible," he whispered hoarsely. "I let the dangerous secret of immortality

fall into Vinson's hands!" His whisper continued but with a deadlier note in it, "I must act before it is too late."

It was the climax of his super-lifetime. Armed with nothing more than a few pages of diagrams and figures York descended on Washington in his silent gravity ship and said he could fight the alien power. He was derided rather than laughed at, in that the situation was too grim for laughing.

CHAPTER V

The Destroyer

HOWEVER, the gravity ship could not be laughed at. And when a group of scientists was hurriedly assembled they said the thing looked good on paper. At the same time the startling news came that The Immortals had been completely victorious in Europe and were now sweeping Asia. If Japan fell, as she must, America would be next as the last remaining power.

Faster than they had ever moved before the wheels of industry, lashed by a frantic government, turned out the apparatus York wanted. He had them secretly move their headquarters to Pittsburgh. The terrible weapon he had kept locked in his brain for over a century took form here.

In two weeks it was nearly completed but not before The Immortals, now dominant in the Eastern Hemisphere, swung their tiny, deadly fleet westward. At the first encounter the pride of America's aerial defense was annihilated by the sweeping rays of the enemy. These rays had all the potency of a two-ton bomb at close range, yet were invisible and noiseless.

"We must surrender." This cry echoed in the halls of authority.

"Hold out," commanded York. "Hold out, I tell you."

They obeyed him, almost hypnotized by his blazing eyes. The Immortals, after defiance of their ultimatum, promptly began razing cities to the ground. Their supply of fuel and ammunition seemed inexhaustible. Coming from the west, San Francisco, Denver, and St. Louis crumpled before the onslaught.

"Enough is enough. We must give in!"

was the horrified clamor among the leaders and statesmen.

"Hold out!" screamed York. "Three more days!"

They did. In those three days Chicago, Cincinnati and Philadelphia became smoking ruins. And the invincible fleet headed for New York City!

But in those three days York prepared. His weapon was mounted on his ship, a long snout of vitrolite pivoted on a universally jointed base. Wires led inside the ship, through hastily-made vents in the hull, to the power source of the vessel. By a quick change, York had fitted his anti-gravity unit to utilize Earth's tremendous gravitational field for power for the vitrolite gun.

Then he contacted the fleet of The Immortals by radio, challenged them, called them back from their course toward New York. They might have taken it as a desperate bluff to save that great city except that York made his challenge a personal one—from himself to Dr. Vinson.

"York?" came back a voice that was recognizable as Dr. Vinson's. "Anton York? Impossible—he—"

"I did not die, Vinson. I survived the cyanide. I've been wondering if you would appear on the scene. I'd almost forgotten you in the century that has gone by. But bad pennies always show up. You've done a lot of damage, Vinson, but you'll do no more. I'll meet your fleet anywhere you say for a showdown. If you don't meet me halfway I'll hound you to the ends of the earth—to the ends of the Universe if I must!"

Vinson's voice spluttered over the radio. For the first time his companions around him saw fear on their leader's face. What man could this York be that their hitherto confident master feared him?

Then Vinson spoke again, "Wait, York. I don't know what you have to give you such confidence against my fleet but listen to reason. You're an Immortal as we are. You belong with us, York—as one of the rulers of Earth. I have no grudge against you. Join up with me and that's the end of it. Why should there be trouble between us?"

York's voice was white-hot in the microphone.

"You will rule Earth without me, or not at all. But first you must put me out of the way. Name the place!"

"Over Niagara Falls!" Vinson's voice,

previously uncertain, rang now with arrogance and assurance. "What can you do against the fleet that has whipped a world?"

It must have seemed like a battle of the gods to those fortunate eyes that saw it, especially those who had caught the exchange of words between York and Vinson.

York's ship, a bright ball of metal and glass, dropped from the clouds several miles from the fleet of The Immortals. A group of tiny black figures could be seen around the base of the vitrolite gun, precariously hung in spring seats.

These were the gunners, iron-nerved army men who knew nothing about the weapon, but who knew that when you aimed the long snout and jerked a lever a something was released that could destroy. Other than that they had only determination and courage.

Like the buzzing of angry hornets, Vinson's fleet dashed for the lone ship. York's ship, high over Lake Erie, hovered like a poised eagle. The long slender vitrolite tube swung toward the oncoming ships. Something blue and pulsating sprang from it, projected a streamer of violet across the intervening space of two miles.

WHAT inconceivable force it was, no one was ever to know. York could have described it briefly as a combination of atom-tuned sound vibrations and electron-tuned gamma vibrations, together able to rip matter to shreds without revealing its secret. For it was a type of wave existing in the audio-ether transition stage between the known and the unknown in catalogued science.

But the effect was not so mysterious. A dozen of the enemy craft sagged strangely, burst into little bubbles of vapor and changed to clouds of black dust that fell slowly toward the water below. The rest of the fleet, as one, swept up and to one side, away from this frightful weapon. Yet before they had completed the retreat, twelve more of their ships had become puffs-balls of black soot.

York smiled grimly. He had purposely made the focus of the gun's beam very wide. Each time it belched forth its titanic charge, a ransom in power went with it. But Earth could afford it, thanks to the almost unlimited gravitational stresses that fed the weapon.

The range of The Immortals' weapons was known to be just as great but they had

not thought to use them on this lone ship three miles away. Now, however, the air droned with the concussion of atmospheric rents made by invisible streamers of their ray-forces. Their rays were amplified cathode radiations, million-watt bundles of electrons at half the speed of light.

York wasn't caught napping. His ship had already moved upward, at right angles to their position, presenting a target moving at a speed of five hundred miles an hour. It was cruel for the men exposed to the air around the vitrolite gun, but necessary. York flung his ship up into the clouds.

The Immortals seemed nonplussed. They scattered widely and massed their beams upward, on the blind chance of scoring a hit. When York's ship did appear, far on the other side of his former position, it was heralded by the destruction of eight more of Vinson's fleet. Most of his ships were already destroyed and the fight had hardly begun!

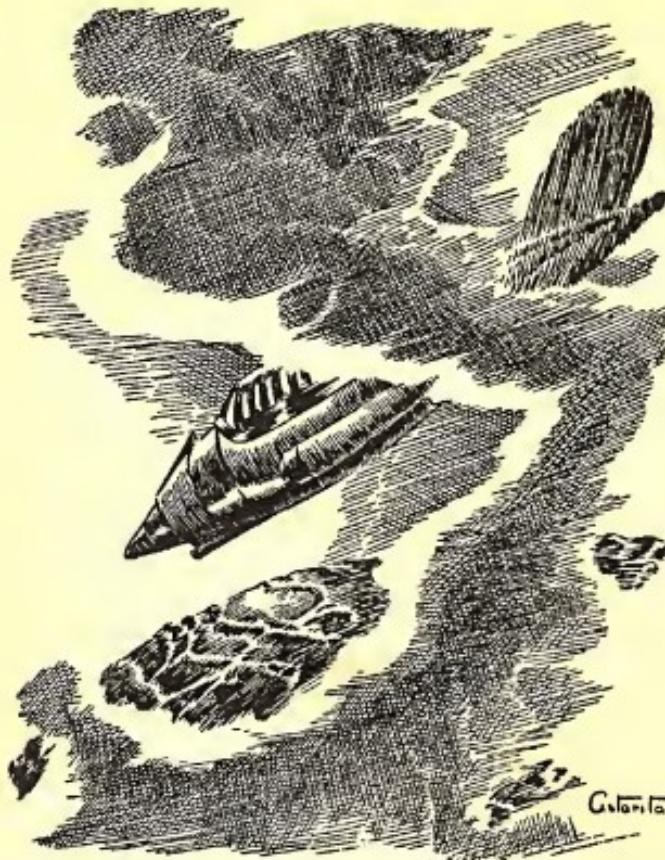
Under this scene, the waters of Lake Erie boiled and rose in great clouds of steam. Niagara Falls, though York tried to avoid it, took most of one of his gun's charges, and became in one minute an unrecognizable jumble of churning waters and puffs of black vapor—grim reminder for all time of this battle of the gods.

The Immortals fled, ingloriously, scattering wide. The swift, sweeping sword of destruction from York's ship picked them off one by one. There was no limit to its range. It hounded the last one down after a brief chase. And the menace of the Immortals was over!

The world had to content itself with honoring three of the five men who had handled the vitrolite gun and burying the other two, dead from their ordeal. York, after landing them, had promptly departed without a word to anyone, without waiting for thanks and praises. Like a god he had come and like a god he left.

And like a god he went out into the void not long afterward, with his wife, leaving behind him the legacy of space-travel. The secret of the super-weapon went with him. The secret of immortality was no longer his to give away. Earth had had a god, one who had nearly destroyed it and then saved it. One who had shown the way to other worlds. One who had exhibited an awesome weapon to warn mankind what its warfare could lead

(Concluded on page 95)



The president

of the

United States

Rocket Society

predicts that

once we have

bases on Luna,

we will probe

the secrets

of Mars!

ROCKET TARGET

BY NOW it is certainly obvious to everyone that the possibility of men reaching the Moon, in our lifetime, is very good. Not only does atomic power give us the long sought for fuel, but the thinking of those who control the nation's purse strings is now very evidently scanning beyond our horizon toward inter-planetary space. Recent recruiting posters of both our Army and Navy have pictured rockets leaving the earth and blazing toward outer space.

No. 2

The Moon is, of course, Rocket Target #1, the first goal of the rocketeer, and, incidentally, the prime goal towards which all nations race. But this is a strange race. It is different from any other race in which the nations of the world have engaged.

In the development, for example, of the steam propelled ship, progress could go for-

by R. L. FARNSWORTH

ward step by step, year after year, until technology could create naval monsters like the Battleship *Missouri* or the liner *Queen Mary*. But during all of this time there was no urgency to build a *Queen Mary*. The oceans could be crossed in 3 weeks, in 18 days, in 15 days and so on to five. Fulton perhaps visualized the great ships of the future but he did not have to build them.

Initial Velocity Important

But reaching the Moon is different. There is only one way to do it and that is by giving your "ship" an initial velocity of 7 miles per second. It is as if one had said to Robert Fulton, "You can not build a ship until you can build one that can cross the ocean in five days!" Fulton, and the world, would have to have waited until all the myriad sciences that go in to the building of a great liner had developed to the point at which such a ship could be built. But that is the position in which the nations of the world find themselves on the eve of the greatest race in history. And that is why the race to conquer space does not seem of such urgency, nor does it have much publicity.

Scientists Wrestle With Problems

But nonetheless, in laboratories the world over, the race goes on! The metallurgists and ceramics experts constantly delve further afield for materials to stand the terrific heat of rocket exhausts or atomic combustion. And the puzzle of how to land a rocket safely with human cargo; and the puzzle of gradual acceleration; and the puzzle of stable flight; and the puzzle of radiations in space—and a myriad of others, all, each and everyone, must be solved before man can step upon the surface of his satellite, his vantage point from which to explore infinity. But these problems will be solved, and soon!

Upon reaching our Lunar space base we will then be able to proceed to Rocket Target #2. At an average distance of around 64 million miles beyond us there accompanies us around the Sun a companion planet with a peculiarly reddish hue, mysterious Mars. Lost as we are in an abyss of space whose magnitude is beyond conception, the eyes of men have turned for untold thousands of years toward the red star which we now know to be a sister planet. We know that Mars has a diameter of about 4,200 miles and

weight on its surface is roughly 2/5 of that under which we labor here on earth.

From what we now know about Mars, which is not a great deal, we are sure that it would still be much more hospitable than the Moon.

While the atmospheric density is probably quite low, like that on a 20,000 foot mountain peak on earth, and the climate is no doubt drier than that of Tibet, there is very definitely vegetation upon Mars. This can be observed through the changes in coloration with the changing of the seasons.

Mars Is Arid

Seasons on Mars are approximately twice as long as those on earth, due to its greater distance from the Sun which makes the year twice as long as ours. The changes in coloration on Mars are exceedingly interesting from another point. This is that whereas on earth green would follow white from the equator UP, as spring brought new greenery and melted snows; on Mars the reverse is observed. On this strange world green is seen to go DOWN from the pole as spring and summer come into their own.

Thus it would seem that Mars is so dry that vegetation can not grow until the snows melt and release precious moisture to a parched soil. Whether this is accomplished through the workings of nature or by stupendous engineering works of intelligent beings we are not likely to know until we get there.

It is probable that the low atmospheric pressure on Mars might pose quite a problem for beings from earth. No doubt the pressure there is so low that we might explode like fish brought up from the depths of our seas, or suffer horribly from the "bends" as our internal gases "boiled" out from our body. However a form of space suit could be worn which would not be as cumbersome as one required on the Moon and which would resemble those now used for high altitude aircraft.

The fascinating thing about Mars is that here, before our eyes, revolves an entire world which may be adapted for the exploitation and colonization of men. The undoubted presence of vegetation supposes other forms of life. The constituency of the air of Mars may be strange but life will prove to have even more varied forms than the myriad guises under which it is found here on earth.

Here on earth there is life in the depths of the sea, under enormous pressures, where light does not penetrate. There is life on storm swept mountain peaks, 20,000 feet high. Life teems in the cold of the arctic, in the heat of the dreariest deserts and even in that most inhospitable of earthly abodes, the dread antarctic, the Emperor Penguin struts his stuff.

The many prevailing arguments about life on Mars revolve around the question of the water supply. The controversy about the "canals" of Mars is largely a controversy about whether or not they are of intelligent origin; for, artificial or natural, they change color with the melting of the polar caps, which make it very likely that they are connected with the distribution of the planet's water.

For some inexplicable reason many scientific minds seem bent on denying the possibility of life elsewhere in the universe. Yet, if in the farthest stars, in the most remote galaxies, and in great inter-galactic clouds, we find calcium, carbon and hydrogen, to mention only three elements essential to life, why can not we likewise assume the all pervadingness of life? If you found a world covered with bricks you would expect buildings.

The universe is composed of the elements essential to all life.

Consult the Dipo

The desert character of much of Mars is always brought up as being a negation of intelligent life. But instead of mentioning the fact that both the African and the Arabian deserts support sizeable populations of nomads, we will bring in as a character witness for life without water the "dipo." Step forward Mr. Dipodomys Deserti! This little

mammal resembles a gopher, a rat, a rabbit and a miniature kangaroo!

Go at night into any of the desert areas of the Southwest, with a little grain in your hand, and the "dipos" will scurry about you in great glee. Now the significant thing about this little mammal is that it does not drink water! Neither does he obtain it thru moisture in the food he eats. His water is created internally by oxidation of the bone-dry food he finds in the desert. His Saturday night bath is his constant contact with the sand, which scourts him as clean as the proverbial hound's tooth.

Now here is a mammal who drinks no water, lives in the desert, and his numbers are legion. So if there is vegetation on Mars, there is no reason why there could not be animal life. As to the oxygen content in the atmosphere, our Martian "dipo," over the milleniums during which the oxygen of Mars has been absorbed by the rocks (giving Mars its reddish tinge) could no doubt have developed a bodily mechanism for producing oxygen as well as water. The only argument against life on Mars, or anywhere else, is purely a cynical one, that life might become so advanced as to be capable of killing itself off in warfare!

A Future Challenge

In any event it can be seen that Mars is easily Rocket Target #2 and that as soon as Man is based on our Moon it will not be long before the gleaming snouts of monster rockets will point out from Luna to embark on the solving of an age-old mystery, is there life on Mars?

And it will be merely the solving of the first of an infinite number of mysteries which will offer a challenge to our sons and daughters of the future.

CONQUEST OF LIFE

(Concluded from page 92)

to. One about whom many legends were to be woven, true and false.

But now the god was gone—forever. Once given a taste of the supreme freedom of the void he could not return to the pettiness of Earth. Nor did he care to interfere in any way, altruistic or otherwise, with its normal course of affairs.

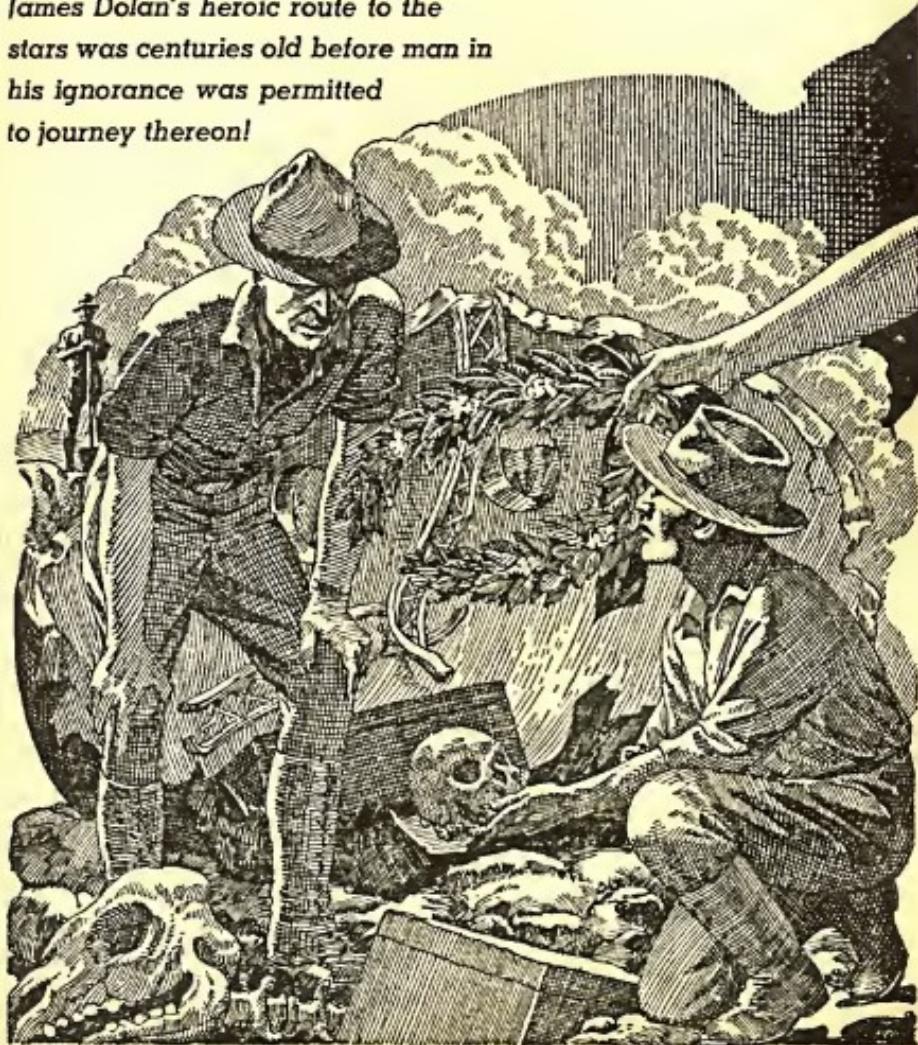
On and on he went, he and his immortal companion. Their understanding and wis-

dom grew to cosmic heights. They visited many worlds, many suns. Time meant nothing. They discovered the secret of voluntary suspended animation, requiring no food or air. They became truly gods.

Somewhere in the dim future ages he must die, this man-made god—sometime when the scales of Time have sufficiently lowered the amount of cosmic radiation which gives the god life.

the incredible destination

James Dolan's heroic route to the stars was centuries old before man in his ignorance was permitted to journey thereon!





by RENE LaFAYETTE

AMONG the many tales of the early voyagers of space, the story of James Dolan should rank high. It did not at the time. It was not even known for five hundred years and then it was received as bric-a-brac for the curious items in the almanac. James Dolan, as a name, is lost in the modern history book. For five centuries it was synonymous with charlatan, for in those ancient days when man was fixated on his birth planet, Earth, he came to believe very little of what he was told about space. Five headed dwarfs and nine-tailed dogs "from Venus" had too often been shown in side-shows.

Space travel, in the vernacular, was a flop. Seventy-five years after the first voyages the economic system in vogue did not fret about universal expansion. It concentrated on such things as food production and birth control

and although here and there men dreamed about future sovereignty of the universe, the mass opinion was opposed. It is very difficult to overcome the inertia of a government or a people. They had Mars. It cost seventeen thousand dollars to transport one man and his baggage to that apparently worthless sphere and the men who had that kind of money had, in the main, no reason to risk their lives going off to a frontier. Only one ship in eight arrived. The return cargo was of small value.

Jupiter, Saturn, Venus and the rest had little to offer an Earthman. The violent fate of the U. S. Jupiter Survey Expedition, the tales of cannibalism in it, the incredible agonies of its members put space travel back many, many years. They had not properly prepared and that, in an expedition, is fatal to more than the one voyage.

**The third in a series on
the Conquest of Space**

STARTLING STORIES

JAMES DOLAN had survived Jupiter with Commander Harding. Dolan was, according to the discolored newspapers in ancient archives recently uncovered at New Chicago in the Earth Galaxy, neither a giant nor even a "superman." He was about five feet five, he was slight and he had mild eyes. He lost a hand, his right hand, on Jupiter where he had been severely frozen. He had lost considerable weight sharing the remaining supplies with the sick. He had come back, testified before a Congressional Committee in favor of Harding and had then dropped out of existence so far as the world knew.

For eight years his name and person were forgotten. During that time he could have been found, any Sunday, at the Explorer's Club in New York City, uttering his toast with a mechanical hand, drinking polite tea and answering in quiet monosyllables when the conversation drifted to him. He was not newsworthy. He did not endorse either cigarettes or deodorants or take a vice president's job with an airline. Few knew and fewer cared what James Dolan was doing.

He had a room in Hartford which was too full of books, maps and old clippings to admit much freedom of his person and a cub reporter, taking an interview there five years after the return wrote a humdrum piece on poverty and the forgetfulness of the world.

That piece and the files of the Harding Expedition were all that city editors had that April day when James Dolan, M.E., E.C., C.M.H., calmly announced that on the following Saturday, conditions favorable, he would take off for the nearest star.

He got headlines for one edition of the World-American and five inches on page fourteen in all the other papers. Abruptly the city editors ran out of copy. They had no morgue on Dolan. They had a release from the Explorer's Club that Dolan would carry Flag 1980 for proper planting. Reporters trying to contact Dolan found him not at home.

It never occurred to these newshawks that even an explorer must eat and that expeditions cost a huge sum of money and that, having no announced backer, Dolan must therefore find salaried work expedient. And he was at work.

In the laboratory of the Hartford Arms Corp. main plant several astonished engineers read the afternoon edition and took it instantly to Dolan.

He was at work behind a battery of sonic guns making standard vibration tests; dull

work but necessary. He was in his shirt sleeves and he had a smudge of gun grease on his chin. He smiled pleasantly.

"Yes," he told them. "I am going Saturday." And he started back to his meters.

"But my god, Jimmy," said the chief engineer, a forthright man. "You can't just sit around here if you are going on a trip like that in four days. Take your time off. Good heavens!"

Jimmy shook his head. "I've calculated my departure on something else than weather. My pay check Saturday morning will just exactly settle my bills. Now if you will be so kind—"

The chief engineer blinked. "You mean that on a hundred and fifty a week, you've financed a trip to the nearest star?"

"In eight years you can save a lot out of a hundred and fifty a week. Particularly if you live on crackers and sardines," said Jimmy, smiling. "I—"

"See here," said the chief engineer. "You need your time. I'll give you time off. What do you think this company is?" He looked helplessly at his fellow engineers. "Has he told any of you?"

They shook their heads.

"You leave that junk alone," said the chief engineer. "I'll see that it's all right. The nearest star. Good heavens!"

Jimmy thanked him, wiped his hands on a piece of waste and went to his locker for his coat. He could use this time. He had been working for sixteen hours every day for eight years but half of that had been for Hartford Arms. There were details. A few details before he jumped several light years through zero.

But he did not get much of that time to himself. As he started to leave the plant gate the Government intercepted him. The newshawks did not have the scientist files. Intelligence did.

The man was large, bored and factual. "I've got orders to pick you up, Mr. Dolan. There's my car. Shall we get along?"

Jimmy Dolan stopped dead still. The discipline he saw was regulation enough. "What could you want? I haven't done anything?"

"All rocket fuel is under Government license, Mr. Dolan. The commission wants to talk to you. There's a military plane waiting about ten minutes from here."

* * * * *

Dolan went to New Washington and answered questions. The office was at

the end of a very long corridor and the name on the door was obscure. Yet all uranium fuels were controlled from here and the small, spectacled person behind the desk, appointed obscurely and working even more obscurely, had something to say.

"You can't go, Mr. Dolan. I am sorry. We have no excess fuels. You should have applied to us before you made your release. I am afraid now that you will find yourself looking a little foolish. Uranium stockpiles are low enough, you know. I am sorry." And he closed the file with a final little slap.

"If I need a passport," said Jimmy, "I shall be glad to get one. But I am not aware of any Earth mandate in the place where I think I will land. Alpha Centauri has no ambassador here, that I know."

"That is State Department business, Mr. Dolan," said the little man. "The problem here is fuel."

"Then we have nothing to discuss," said Jimmy mildly. "I am not using rockets and I have no need whatever of atomic fuels. I have much work to do. If you permit me to return in the plane which—"

"You what?"

"I am not using rocket drives."

"You are telling me that another drive exists?"

"Yes," said Jimmy, mildly.

"You invented it?"

"Well, let us say that I used some known principles. May I return by the military plane? I have much to do."

They let him go. But he had five Defense Department experts with him. The trip was a very quiet one. The five men had some sort of idea that they were a prison guard and that communication was impolite. They had orders to inspect the intended vessel, seize all atomic fuel there, disable the rockets and return with Mr. Dolan to Washington for further conference.

It was almost midnight when the bomber landed finally at Hartford and it was two in the morning when a cab stopped beside a high board fence in the poorer section of Hartford. They alighted and Jimmy let them in through the gate. He closed it carefully. Hartford had been strolling past this vacant lot for six years in the belief that some junkman used it for storage and pilots had been flying over it continually without penetrating its upper net.

There was a small, dirty shack in one corner of the yard and when the light was

lighted in this it streamed out through the cracks to show a sphere. The weird lighting impressed the Defense men a little and they became brusque.

JIMMY watched them cover the entire ground of the yard with counters and test the ship.

The Army man was the first one who saw the lack of tubes. "Who are you trying to kid, Dolan? You've got the motor elsewhere and you've stored the fuel where it won't be touched until the last minute. It's late and we're tired. If we have to cover this whole state to find it, we will. Now what's your answer to that?"

"There's no fuel," said Jimmy. "I don't use tubes."

"There's got to be fuel!" said the Army man violently.

"Well—of course there is a fuel of sorts. But it isn't under government jurisdiction. I have called it Fuel 105, since that is its atomic weight. It is here in this package."

He showed them the cigar box on the desk and they opened it. Something was wound with copper wires and attached to a light cord. "That is the shield, don't remove it," said Jimmy. "You've heard of Gordon McGregor. He brought it to me at my request from the Martian mines. It had no value until I refined it. It is the remains of a meteor, of which there are many on the Moon and Mars. It has a half life of six years when it is refined."

"It don't radiate," said the chief investigator, poking an all purpose scope at it.

"Its radiation is not measurable," said Jimmy. "At least not by your means."

"You've got to tell us about this," said the Army man.

Jimmy sat down on a barrel head and lighted a cigarette. He was very tired and his mechanical hand wouldn't hold the match right. "Gentlemen, I majored in magnetics under the great Marston. I had to work hard to get through school and he made me an assistant instructor when I was an upper classman. He gave me his notebooks when he died ten years ago. When my wife and boy died I went to Jupiter. When I came back I heard from McGregor about these particular meteors. I worked for two years before I knew I had a magnetic field of a type hitherto unclassified. There are five kinds of magnetism now known generally. This is the sixth."

"It is your duty," said the chief investigator, "to give this to your Government."

"It is a potential weapon," said Jimmy. "I do not work for the Government. When I have demonstrated beyond all doubt that wars are no longer necessary on Earth because unlimited territory is available to man, the formulas will be made accessible. Until then they are my property."

THHEY took this sullenly. There were no Congressional laws to cover it. A citizen was, after all, a free citizen. Such a discovery could only be pre-empted in time of actual war and there was no war. The man from the Navy's judge advocate's office said so, put the wound package back in the box and stood up to go.

The chief investigator was not satisfied. The Army man, a scientist himself, wanted proof.

"We don't even know that this works," said the Army man suspiciously.

"It is a force field. The old, old force field. But it is a repellent," said Jimmy. "It will repel at the rate of fifty thousand horse power per gram and its magnetic speed is several hundred times that of light. Better activators will be found. This one will, for the moment, have to do."

They were still uncertain. Jimmy took a microscopic grain of it, laid it with copper tweezers on a brass anvil and braced it there. The grain was wrapped in infinitely fine wire. Jimmy cautiously waved them aside, lowered a metal hood over the grain and threw a small switch.

A can on the table hurtled away, struck the far fence and fell flattened. A large crack ran through the boards at the end of the yard. Jimmy flipped the switch back while he still had a working place.

They stood in the shadow painting light for a moment, staring at this mild, small man. And then they quietly took their leave.

On Thursday, the newspapers had to have more news and they printed what they could. The stories they dug up on this date do great credit to an editor's ability to keep a story alive and very small credit to the scientific logic of that ancient time.

Even though superstition itself was more reliable than the greater part of the theories of matter and mind than at present, there was no real excuse, except perhaps a discreditable thirst for publicity, for the bombast which was delivered against Mr.

James Dolan, M.E., E.C., C.M.H.

Any new scientific discovery, the gist went, would long since have been known intimately to every sub-instructor in every university in the world. There were no astonishing new discoveries to be made—a statement which curiously recalled the gentlemen who resigned from a patent office about a hundred thousand years or more ago "because everything has been invented by now," thirty years after the first voice-wire communication was discovered, though fifty years beyond that date the "electric light" "an early means of artificial illumination" was first used.

There were no prohibitions against the Defense Department people talking on a subject not covered even by that nebulous word, Security, and while their names are not to be seen in these moldy old prints at New Chicago, it must have been from that source that decrying material came.

Magnetism was magnetism. There were five kinds. That was the end of it. The several thousand kinds later discovered give one pause to wonder at the human desire for limitation.

The absolute masterpiece of all these stories is one which states that a new force, if discovered for such purpose as inter-star travel, might unbalance the delicate atomic disintegration of the sun, probably by pushing against its corona.

But if others thirsted for publicity here, Jimmy Dolan did not. His mechanical hand was very clever at cutting wire in the proper lengths but it was not very good at clock-work mechanism. He was sweating over a crude magnetic radar when the reporters cracked him out in his lair.

It was Friday afternoon and Jimmy had worked night and day since leaving Hartford Arms Corp. but he was very gentle and polite to the reporters.

They sat around smoking hard, scribbling hard, staring hard and asking hard questions. They had been briefed by all the data which detractors had put out.

"Is it true," said one of them, "that a man can't stand a loss of gravity. Doesn't it hold him together inside or something?"

This one creaked. They had asked it scores of years ago of the first Martian expeditions.

Jimmy was patient and explained it wasn't true.

"But it will take you ten or fifteen times a normal lifetime to get there," said another, quoting another detractor.

"I will not travel at 'finite' speeds," said Jimmy. "I intend to make many times the speed of light."

"That will make you several times the size of the universe," countered another. "My math prof—"

"That's theory," said another reporter. "Isn't it, Mr. Dolan?"

"Yes, that is theory," said Jimmy.

"But if you hit any space dust," said one youth, "it will pulverize you, won't it?"

"Yes, if I hit any," smiled Jimmy tolerantly.

"You just takin' a chance, then?"

"No, I have a guard field which will disintegrate rather large objects before the ship can touch them. I will then be passing through gas. This may be erosive but not fatal. The guard field is the ordinary city field protection against guided missiles with which you are probably familiar."

"You intend to be long on this trip?"

"About two months in transit. I have air and supplies for eight months."

LOOKING skeptical, they took notes, saw another can flattened, inspected the ship and generally took up valuable time.

"Give us some dope about your own life," said a reporter.

"It's been just an average sort of life," said Jimmy.

"But you want a statement issued, don't you?"

"Yes!" he said suddenly. He took an offered cigarette and a light. He was smoking a lot. There would be a long time in which to break the habit and this was indulgence.

"Gentlemen," said Jimmy. "Earth is starved for land. The doubling of the average life span has made poverty common and not even wars have been able to keep up with the birth rate. Man needs to stretch out. When he has new territory beyond surveying, he will no longer indulge in spiteful conflict here on Earth. The solution to war and famine lies in the conquest of the stars. Many men have already given their lives to make such a thing possible. This dream is not a new dream. A hundred scientists today could have undertaken this project, but perhaps they do not share this dream."

"My task is to find habitable planets, to demonstrate this type of drive as an economical means of reaching them and to turn men's minds to new systems, new worlds and new freedom."

"Pardon me if I sound like an idealist. But I am afraid there is no other excuse."

They stared at him, impressed. He was such a mild little man. He was working with so very, very little. He had a dream. They did not share it but they could respect it.

They reported him fairly well but there were bigger things in the news that day. A movie actor had been pronounced insane and that seems to have put space travel on page three.

He was equally luckless when he departed. Several of his friends were there at four-thirty to bid him good speed. But a ten alarm fire had gutted a tenement at three-five and the press services were busy counting the dead and dying.

At the appointed moment the ship drifted upwards without the usual flame and flash, that spectator-searing departure which had always marked earlier voyages. It grew smaller overhead against high-riding white cumulus formations, began to pick up speed, was a momentary target for a practicing corporal on a new radar sight at the nearby flying field and then was gone.

Flight to the stars had begun.

The most remarkable part of this departure was the seeming absence of any interest in what James Dolan's brain might have contained. But the world was tired of the dreariness of Martian travel, of the sideshow freaks, even of marvelous gadgets. It was an age when Man trembled of the brink of his most astonishing discoveries and yet old and weary, supposed that all new things lay behind him.

Dolan's log does not find the fact curious. He knew he was an explorer. He knew the lot of explorers who reach too far beyond the accepted fact to reach the understanding of men as well.

Dolan's log is humdrum. It remarks on several things which man was a long time learning. Speed indicators were needed. He made a scale of star colors so that, as the color of a destination changed the speed could be judged. He accurately described distortion of bow stars. He found six new rays. And he plotted the curve of space, a feat in itself.

He had five weeks in an iron and copper sphere with its curious, spring walls to change shock to something a man might stand. He had five weeks to record what he had done wrong and what he had done right and he recorded them. James Dolan might

not have been a fire-ball hero but he was a very thorough man.

For five weeks he made notes and changed his courses and speeds to fit hitherto undiscovered phenomena. He ate sparingly of his stores and drank as little as possible of his water, a fact recorded with human abruptness every few days, "I wish I had a gallon of lemonade", amid a jumble of scientific recordings.

His heat unit failed in the last week and he had to spend the last five days in a suit while absolute zero did odd things to canned food and made a brittle ice-pond of the air which had been in the sphere.

And then he found his star. And found it was the wrong star.

Three dimensional navigation had been invented. A dozen books or so had been written upon it. But three dimensional navigation at finite speeds of thirty or forty thousand miles an hour is very much different from that required in maneuvering a ship traveling around a million miles a second.

When Clavesty first achieved the speed of light and passed it for four minutes several years before this in a rocket drive job, he commented that the man who could draw the pattern of space seen from that speed had not yet been born. Clavesty was right at the time and, as far as human observational powers are concerned, is right even to this day. Space plays strange tricks.

JIMMY DOLAN, riding his sphere, looking with mild eyes from his leaded ports on undiscovered dead systems, flaming comets and blazing stars never before recorded by man, had not counted upon his force shield shedding light particles to the extent that it did. A simple fault in the proportion of the field had distorted actual direction. Having no way to measure speed, he had come to a place where it was nearer to approach a small, unknown star than to cut back to Alpha Centauri.

If he believed in Providence, perhaps it influenced his decision. He braked down more rapidly, turning the while, and spent five days of torture, sluggish against the forward end of his craft.

Hours were measuring sticks but they had ceased to be days and nights now. Dates meant nothing. He devised a galactic calendar and time measure in a crabbed hand as he lay pressed by force against the springs and cushions.

It was a small star, about twice the size of Sun. He named it Galileo and closed in, braking against the particles and the star to find any planet.

It was a fifteen planet system, a remarkable thing. And the planets were in some sort of plane, giving him the idea that an underlying law was here which might be expected to work with every star, a singular error for so thorough a man.

And now began, there in the unlovely interior of his unnamed vessel, the unraveling of a puzzle. He lacked instruments to test for atmosphere and gravity and, uncomfortable as he was in the absolute zero with a failed heater, he had to find a good planet as soon as he could.

He did one of the crudest and at the same time most accurate calculations in current record. He arbitrarily assumed that a double sized sun would have a livable planet six orbits out instead of three or four. He had no reason whatever for such a supposition. He only knew he was cold and hungry and thirsty and that he would not live long on the amount of air he could get into his suit from the blocks of frozen stuff in the tanks. He spotted and headed for Planet Six.

Face pressed to the leaded panes, he could see the clouds of an atmosphere. He saw greenness and the silver of water under them. He braked and came within two hundred miles of the surface, stopping there for a moment. He felt healthy gravity and it did not appear to be too strong. His ship was already in atmosphere for the sky was less black now.

He opened a tiny petcock. It blew in, not out. It was atmosphere. It turned oxygen paper green and tested nul methane, nul ammonia, positive nitrogen. He let his sphere fill. The light of Galileo was already making his ship warm and even if he could not discard his mask, there were fewer knives in his lungs now. He had been breathing forty degree air for days. He let himself have the luxury of full atmosphere.

He was excited. He sprang to one and then another of his ports, craning to look straight down. He saw that he could land in what appeared to be a temperate zone and that he would be choosing morning. That this planet turned was obvious. It must have a fifteen hour day. It was bigger than Earth. Much bigger.

Jimmy lowered away. He coaxed his vessel over the area chosen and dropped to five miles. And then he stood staring at a port.

He opened it and looked out. He took off his helmet and mask after several careful whiffs of atmosphere and looked out again.

He was about five miles north of a large and sprawling city whose white buildings blazed in the morning light.

The city was planned in widening circles like a stone dropped into a pool. The buildings were low. Things were moving in the streets.

It gave Jimmy a slight turn. He wondered if he had navigated to some strange spot of Earth by error. He had not looked for beings. And while Jimmy Dolan was unconcerned about the dangers and travails of space, he was a very shy and retiring man. Stage fright took him. They might suppose him a god. Then again they might think he was a monster. Still again, they might have a society much superior to his own for certainly their architecture was wonderful.

He saw a tilled field and dropped toward it to discover that it had been lately harvested. With more than a little trepidation he landed upon it, opened his airlock and stepped out. He had come on this voyage without so much as a bean shooter. He had no magic tricks. All he had were his knowledge and his dream.

A biped animal was standing near a wall and Jimmy bolstered up his nerve. The thing was tan and about eight feet tall. It had two arms which ended in paws and it had two eyes. It could almost be considered a normal thing except that there was no intelligence in its eye nor curiosity in its movements at seeing Jimmy approach. If this thing was an example of the being with which he had to deal, he felt he could be confident. He came within two feet of it and still it did not move nor look frightened.

"Excuse me," said Jimmy, "I am a man named Dolan. I come from a planet smaller than this one which goes around a star you might be able to see at night—"

HE FELT silly. The thing could not possibly understand his words. It was not even interested. But his embarrassment made him talk to it.

"I want water and food," he said and made motions of eating and drinking.

It looked very incurious indeed.

And then there was a peal of laughter behind him and he whirled to see a small creature standing by his ship, a biped with merry eyes, a tawny skin and a red, laughing mouth.

A "boy" or a "girl." Not human. But not quite unhuman. He or she was laughing at him.

A voyage in space shakes a man as any space surgeon can say, even today. Jimmy was more shaken than he knew. There was a rock there and he sat down suddenly upon it. Relief at being here was stronger than he knew.

He or she came up to him, still laughing. A jabber of language, obviously sentient, ended with the word, "Blitho" repeated several times, punctuated each time with laughter.

Jimmy Dolan knew he had been caught talking to some approximation of a cow.

After a while he made her, for the race was bi-sexual, understand that he could *not* understand. This stopped her laughter and she became interested in the ship, his clothes and condition. She had evidently believed before this that he had somehow been rolling this sphere across the fields and was an odd import from some strange country.

By signs he informed her he had come from the sky and when she had exhausted her list of countries of her world, each time getting his negative, she became very sober. She beckoned and he followed her to a round hut where stood a group of older people.

They had seen him land as the "girl" had not but they only nodded solemnly when he pointed to himself and to the sky. This did not seem to stretch their imaginations but it did stir their speculations.

They talked to one another while the "girl" brought water and a mound of food on a slab. Jimmy sat down, sampled his wares, clandestinely added an antiseptic tablet to the drink and began to put the hot edibles down. From time to time he looked at his hosts.

Their riches could not be great but they were well enough fed. They stood a little smaller than himself and he had begun to realize the increased gravity and knew this would account for such a thing. Their arms were a little too short and their legs a little long, which gave them a cranelike appearance when they were thin with age. Their faces were not at all ugly but they had a strangeness, a certain displacement of feature which was a trifle disconcerting. But their voices were low and obviously well mannered. Here were civilized, sentient beings, humanoids.

Jimmy looked at the rolling country of their corner of their world. The vast city

was out of sight over a green hill. It was not an unpleasant place. Not at all.

It was luck which had brought him here. If Jimmy Dolan's luck had stayed this good in the year to come, he would be part of our clumsiest jingles now.

He was given a pallet on which to sleep inside the hut and when he saw it would not be discourteous to do so, he stretched out and was instantly unconscious.

When he woke again the shadows outside had changed and they confused him. It was dawn, not afternoon when he had oriented himself. He had slept a day and a night nearly around, sixteen hours his watch told him, and when he woke and felt how stiff he was he knew that he had been, there in the ship at the last of the voyage, very close to collapse. He stood up and found the family gone. Prowling a bit he found a bucket of water, dropped an antiseptic tablet into it and stooped to drink. And he was shocked to see what looked back at him. Unshaven and dirty, he would never have done in anything higher than a hobo jungle.

He went to his ship. The ground was well worn around it but nothing had been touched within it. Evidently crowds had been here. Jimmy found that with true scientific thoroughness he had forgotten shaving soap and toothpaste and razor. He had a clean khaki suit, however. He took a scalpel from the surgical kit he had brought, a small can of mechanic's soap and repaired to a brook near the house. Behind a screen of shrubs with much pain and travail he remedied his condition. He had cut his chin, for scalpels make bad razors and brooks poor mirrors.

He was sitting on a bench up against the house writing in his log when the deputation came. They stood waiting with patience until he looked up and then one man, dressed simply in blue linen-like cloth and badged with a carved animal of some sort on his shoulder, stepped forward and smiled at him.

There ensued a very unsatisfying conversation, done mostly in signs. Jimmy saw that they took it very easily that he had come from the sky, saw that he had communicated the idea of stars to them and found that they had names. But they had no awe of him. They were a little curious and rather pleased.

They gave him good food and ate breakfast with him. He sighed with relief at not having been mistaken for a god. But after a bit this aroused his curiosity. What sort of a society was this which could accept men

from other worlds without fright or superstition.

HE WAS to learn many things in the days that followed. He was to find that the main curiosity was the metal about him, for there was almost no metal used on the entire planet. In his turn he was to goggle at children playing with ten and twenty carat diamonds and rubies and other precious stones he could not immediately name. He found, eventually, that this was a society without a religion of any kind. The people, it might be said, worshiped their own people's-creations and seemed to be unconscious of sin as an entity.

The "girl" whose name was Muleen, was pretty in her way and she smelled fragrant. She spent her time either laughing with him or sitting very quiet looking at him.

Daily he expected to find a crowd out from the city but no one came and at last he adventured it. He could not leave without looking at this marvel and so, one morning, he communicated a desire to travel and found the "girl" a ready companion.

He had learned a few of her words. She had mastered a few of his. They conversed now in standard signs, standard only to them, and a jargon which could not be creditably rendered.

When she found where he was going she frowned and hung back. But he went on and at last she kept pace with him. He wondered if some giant might not rule in the place with ogres for soldiers and amused his fancy with it.

From a hill they saw it lying agleam in the crystal morning. The endless vista of towers and walls impressed him and he swung anxiously on, Muleen dropping back a trifle and looking a little afraid.

They came to the first rampart, a gate, a gate a hundred meters tall and magnificently wrought in a yellow metal. One side of it hung limply from its hinges and there was no guard.

Jimmy went on through it, pausing only to look at a plaque which he could not read and going on, looking for people.

There were no people. In all this vast city there were no people. The streets were unpaved and grown heavy with grass and stray domestic animals ranged here, feeding docilely. It had been these which Jimmy had seen from above.

When he had gone a mile into it he was

convinced. There were no people. There were tall towers and ruined walls, broken stairs and gaping doors. But not one inhabitant.

He stopped. It was so quiet one could hear the ringing in his ears.

Muleen whimpered a little and hung close to him. Jimmy went on, traveling toward the center, walking over piles of alabaster masonry, struggling through creepers and small forests which blocked the streets.

Now and then he entered a building and came forth. There were never any possessions within, no bodies, only debris. But there was metal. Strange yellow stuff it was, soft and pliable. He classified it as gold and twisted several pieces of it from broken gates.

Gradually the tomb began to depress him and when he had reached the center he was almost as superstitious about the place as Muleen. She kept tugging him to come back but he had to finish his photographs, attempt to describe this strange architecture and make certain there were no clues.

In the exact center of the town a great white dome arose. It was flanked with wide courts on various levels. He was about the enter the dome when a cry from Muleen stopped him.

There were two animals, curiously like wolves but larger. They stood with malevolent eyes, sole possessors of this gigantic city. Jimmy started toward them, fishing in his pocket. They held their ground, even crouched toward him. Jimmy took his cigarette lighter, pulled up the wick and lit it. They blinked at its light. He thrust it at them and they ran, terrified.

Muleen was begging him now.

Jimmy gave it up. He looked at the golden filigree work on the dome, at the plaques, then at the broken pavement and the now distant wolves. He turned and walked rapidly back the way they had come.

He was to discover that there were a thousand such cities at least on this planet, imperishably built in all things except people. Any inhabitants here lived an agrarian life. There were no rulers, no clans. They used little if any metal. They had no weapons beyond tipped spears.

The planet was a riddle. He spent the next dozen days trying to master enough language from Muleen's baby brother to ask intelligent questions about it. Had this race been exterminated by disease or was it a different peo-

ple who lived here on the plain?

He could gather a little. The city had been abandoned as long as anyone knew. What had chanced with the peoples therein, no humanoid present could tell.

JIMMY went back again. He could find no graves, no statues, no clues. And then he gave it up for the moment and began to classify animals and plants and use his camera thoroughly. At night he set himself the problem of finding Sun in this strangely studded sky. Sun was very small and he had to redraw all his charts by known distances, directions and sizes.

There were no birds here, no insects. But there were many quadrupeds and several kinds of fish.

Jimmy was getting impatient. He had conquered space to the stars. That was his main project. Men could spend the long and necessary time being naturalists when they followed in his tracks. He had been the first. He wanted to get back and, very humanly, say so. His dream, should he make Earth safely, was realized. Man, conquering space, could conquer, at last, himself.

He fixed his heating unit, he loaded his tanks and one pleasant day touched the back of his hand to his lips in their fashion of good-bye and stepped into his ship.

Muleen wept. He gave her his pocket comb and an old school ring and once more kissed the back of his hand.

He was glad to be aloft again. This time he drifted for some hours, watching the planet turn, dropping down to find empty cities beside the great rivers and seas, rising again, locating new ones and inspecting them. They were all empty. They were all white and gold tombs, meaningless and mute.

When he wearied of this and exhausted his last film, he set his force beam against Galileo and went through the agonies of acceleration for the next four days.

He had chosen what he thought was Sun. He was very lucky. It was Sun. And on the twenty-seventh of April, James Dolan, M.E., E.C., C.M.H. landed at the Hartford Municipal Airport before the eyes of embarking and departing passengers and a bored dispatcher.

Ten minutes later he was on the phone, trying to contact the President of the United States. He did so. And for twenty-four wild hours, James Dolan was a hero complete with parades.

The State Department came to his hotel in Washington and sat around on radiators and window sills when the chairs were gone and said complimentary things.

The Defense Department wanted to know about this new drive and the sixth order of magnetism. And then the photographs came back from the Government darkroom and the photographs were blank.

Jimmy stood looking at their grey opague-ness. He frowned. He tried to recall just when he might have been careless with them. He tried to recall passing some comet which would have contained penetrating rays. He could not. And then he looked at his camera.

Absolute zero does things to shutters. The contracting metal had torn from its pins and the leaves lay useless in the bellow. One had stayed locked in place.

He showed them his camera at the Defense Department and suddenly they seemed cool and strange to him.

"Mr. Dolan," said the secretary, "I have some rather bad news for you. The metal which you brought back is a copper alloy, copper and silver. It has been in manufacture for the past century at the Revere works in Boston. It is the same metal."

Jimmy stared at him. He looked back at the blank photographs.

"Mr. Dolan," the secretary continued, "in the absence of other evidence, it is my painful duty to inform you that this department no longer credits your tale. That you went into space with a new drive is sufficiently laudable. That you have invented a new magnetism is in itself a wonderful thing. May I suggest that you confine your claims to these rational items and so gain your measure of reward. If you will now make a statement to the press assembled in the next room to the effect that this is pure hoax designed to attract attention to your inventions, I shall even then be happy to cooperate with you."

Stunned, Jimmy let the blank negatives fall. He leaned against the desk, trying to say something which would be adequate. He was a mild man. But his mechanical hand drew deep scars into the mahogany as it closed. He turned and went to the press room, thinking hard.

He faced them, these languid, half interested reporters who already had the secretary's decision.

"Gentlemen," said James Dolan, "I went into space and to the system of a star. I went

because I believed in something. I believed that Earth, released from excess population, interested in new accessible territory, would be at peace within itself and turn all its efforts to a mastery of the Universe. There are thrones for every ambitious ruler in the stars. There is land to raise food and sweet air to breathe. Gentlemen, I made this voyage. That I have brought no proof is a misfortune which only your faith in me can mend."

They looked at him cynically. There had been the famous Gerault who had met the Queen of Venus, he said, but had never left his yard. There had been fakers by the hundreds. No one had had enough imagination to claim a voyage to a star. They remembered now what his detractors had said when he went forth.

"Possibly," said one reporter, "you may have an accurate and more convincing account of your voyage."

DOLAN stood up straight. His mild eyes were not mild now. "I traveled for five weeks, once reaching an approximate speed of five million miles a second. I found a star and on its Sixth Planet, a humanoid society. I found a thousand dead cities of gold where only the herds and wolves ranged. I have returned. Within a week I shall set forth again."

This gave them a little pause. They were not bad fellows. They would write what they had heard and they wrote it.

Three months went by and there was no further word of James Dolan. Six months passed and he did not return.

And then a wag wrote a comic piece in a Sunday paper about finding a million dead cities of solid diamond and women with wings and cows that talked, and Earth relaxed. Dolan was somewhere. Hiding, probably. Down on the Amazon or even on Mars where any outcast was free to come and go. And another wag coined a phrase by calling a musical comedy producer's blurb a "Dolan". It stuck.

For five hundred years it stuck. And Dolan never came back.

They used his force drive as a weapon against men and named the Sixth Field after the man who exploited it and wrote its equations. And Dolan did not return.

A little over five hundred years after his first take-off, a metallurgist named Smalley

(Concluded on page 115)

Officer Classy lunged forward and caught hold of the hand



Dimension: Praecox

By BLAIR REED

Folks were in for a rude awakening when they saw a disembodied hand reach into their shops and homes!

AT 2:45 P.M. of a fall day, a customer in the Houseware Department of Lochwald's Department Store approached Mr. Phoebus and asked to see the aluminum soup pots. Mr. Phoebus, floor-walker, was gracious. He gave the impression that he had been waiting all day for just this request. A slight, dapper man, with receding brown hair, a bow tie, and a saccharine smile, he had been with Lochwald's for ten

years and he was plainly proud of knowing his business. Now, in his best ingratiating manner, he bowed slightly from the hips, which was all his girdle would allow, and said:

"Yes, madam. If you will step this way, please?"

Flattered by such gallantry, the stout, middle-aged woman in the flowered dress flushed a little with incongruous coquetry slightly

complicated by high blood pressure.

At the cooking utensils counter, the shining aluminumware was neatly stacked.

"Ah!" breathed Mr. Phoebus ecstatically, "you are very fortunate, madam. There is just one soup tureen remaining. Now this is especially durable material which—"

And then Mr. Phoebus broke off in open-mouthed horror. For there, right before his bulging eyes, the shining soup pot—apparently of its own volition—rose jerkily from the counter and swiftly disappeared into thin air. . . .

The Eugenie Jewelry store, conservative and long-established, had all the dignity and hushed reverential air of a marble-halled art gallery. Mr. Lucas, impeccable and distinguished in his blue pin-stripe, was nodding his neat gray head politely as he showed wristwatches to Mrs. Carruthers, a middle-aged society matron. In his hands, with loving care, he held one of the smallest and most expensive watches in the store.

Mrs. Carruthers had decided she would take it. Smiling pleasantly over this considerable sale, Mr. Lucas peered through his glasses at the store electric clock. This, he said later, was what fixed the time in his mind. "Three p.m." he remarked to his wealthy customer. "I will wind the watch and set it for you. Of course, in the first few days it may vary in accuracy by a minute or so; but if you will bring it back, we will be glad to make the necessary adjustment. All watches, you see, need—"

"Yes, yes," said Mrs. Carruthers, hardly listening. "I understand. I'll send it with Pierre, my chauffeur."

Mr. Lucas nodded and, having set and wound the watch, laid it gently back in its plush case. As he started to hand it to Mrs. Carruthers, he blinked.

FOR THE HAND that took the case from his was certainly ill-kept. Mr. Lucas stared at it, shocked. Its knuckles were gnarled, it was large, the fingernails were broken and not exactly clean. He could hardly believe it of a woman so prominent. As the hand and plush box disappeared over the edge of the counter, he looked up askance. It was a moment before he realized that there was an even more baffled expression on the well-groomed Mrs. Carruthers' face.

"Where is the watch?" she frowned.

Mr. Lucas blinked. "Why," said he, "I just gave it to you."

"You—Now look, Mr. Lucas, I have dealt here for a long time and I am in no mood for games. Really, this is ridiculous at your age. Practical joking in business! Come now, what have you done with the watch?"

A growing consternation seized him. "B-but Mrs. Carruthers," he stammered in protest, "there is no trick! I—I handed it right across the counter here and—"

He looked down at the counter. His jaw sagged. Because Mrs. Carruthers' hand was on the counter now and it was beyond doubt a small, feminine hand, white and neatly manicured.

"Well?" demanded Mrs. Carruthers frostily.

Mr. Lucas moved his jaw up and down several times, but no words came out. He was quite speechless. . . .

It was 3:20 p.m. at Antoine's, specialist in ladies' millinery, gowns, and accessories. Miss Hildreth, a shapely, attractive brunette, gave a sigh of relief that the scatterbrained debutante, who didn't know what she wanted, had finally gone. Now, shaking her head, Miss Hildreth, with a little, sinuous movement, pushed her frock down a bit over her curving hips and set about putting away all the hats the debutante had tried on.

Despite such occasionally harassing customers, she didn't mind working here at Antoine's. It was a lovely store, dainty, feminine. It looked, she thought, like a picture in *Vogue* or *Harper's Bazaar*. The clientele was nice for the most part and nobody could ask for more exclusive surroundings. No, she didn't mind it at all, she reflected; in fact she would distinctly like it if it weren't for Antoine himself. Not that he wasn't pleasant. That was just it; he was *too* pleasant. The old lecher.

She shivered a little with distaste. He must be at least fifty. Of course, he was slender for his age and graceful, but that little mustache, and those dark, glittering eyes that always seemed to be undressing her—ugh. She had read about these Frenchmen; you had to watch them.

As she stooped to put a hatbox on a shelf under the counter, she saw that Antoine was directly behind her adjusting the gown on a wax mannequin. She drew a breath and went on with her work busily. She was always uneasy when he was near her. Why, she asked herself, didn't he pick on one of the other girls? They weren't exactly unattractive. But no—

Suddenly Miss Hildreth felt a hand on her

shoulder. Her jaw tightened. The hand moved softly down over her bare arm and then was gone. The nerve! Her nostrils flared indignantly.

With compressed lips, she turned. What did he think she was—dumb? Standing there fooling with that mannequin as though he was the most innocent lamb in the world! Well, she'd let him know, all right.

"Mr. Antoine," she said firmly. "I came here to work as a salesgirl, is that clear? Just that and no more!"

With this, she tossed her pretty head and walked off, leaving Antoine to stare after her bewilderedly. After a moment, he smiled and gave an expressive shrug, rolling his eyes to heaven. These American girls—ouf! Such spirit! Who could understand them?

He was about to turn back to the mannequin when he froze in his tracks, eyes widening at the hat counter. He was seeing it and he couldn't believe he was seeing it: an arm without a body. The hand was feeling over a hat. It picked the hat up. Then, arm, hand, and hat soared upward through the air into nothingness. Antoine's face turned green, then a mottled purple. He tried to speak, to call out. Instead, he fainted dead away. . . .

Horace Niblock, young inventor, was skinny. Atop a bony and angular frame, perched on a pipestem neck, his head looked very much like a billiard ball with a crew cut, horn-rimmed glasses and flaring ears. Altogether, he was not a very prepossessing figure, but he had accomplished a very prepossessing thing.

Now he was bending over a strange, dial-covered contraption which resembled a record cabinet with a built-in radio.

"Madge!" he yelled. "Look what I've got now!"

HIS ARM was in the cabinet, a queer sight because the cabinet didn't seem deep enough to contain it.

Madge, his well-built, chestnut-haired wife, came running down the basement stairs to his laboratory. She was breathless.

"What, Horace? What now?"

Withdrawing his arm from the machine, he produced a woman's hat. It was a smart, sophisticated, expensive hat. Madge's eyes lighted.

"Horace!" she squealed. "It's gorgeous!" She had it on her head in a flash, turning this way and that. "How does it look on me? Is it chic? Does it suit me?"

She ran to a mirror on the wall. "It's a wow!" she breathed. "Darling, why didn't you invent that thingumajig long ago?"

"Thingumajig," grunted the horn-rimmed inventor, straightening up his unbelievable angles. "That's a woman for you! I've been telling you all day this is a fourth dimensional projector. Thingumajig!"

Madge was still occupied with her reflection in the mirror. "Oh, Silly, I don't pay any attention to all those involved explanations. How does it work?"

Horace groaned at this feminine masterpiece. "There is," he said, exasperated, "utterly no use telling you, but here we go again once and for all. To keep it simple enough for your incredibly minute brain, time is the fourth dimension. This is a machine to reach through that dimension, through time. Time is spelled T-I-M-E. Get it? The dials are set for fifty years from now, which means that anything put into that cabinet is immediately transported fifty years into the future. I have, you might say, been reaching into the world of Nineteen Ninety-Nine. Of course, there is no way of governing place as yet and I have evidently reached into future merchandising establishments, judging by the articles I brought back."

"What I don't understand, though, Horace," Madge interrupted, tilting her head to one side before the looking-glass, "is why the box the watch came in had the Eugenie Jewelry Store's name in it; that's one of our stores here in town."

"Which," Horace shrugged, "is exceedingly simple, my beloved lamebrain. It is not inconceivable that Eugenie's will be in existence fifty years from now, is it?"

"N-no," said Madge. She looked at the dazzling watch. "It sure is lovely."

Switching off the current from the machine, Horace drew his large-knuckled hand across it lovingly. "Baby," he breathed, "we've really done it. Do you know what this means? Fame, fortune, independence!" His eyes glazed behind the dark horn rims. "Why, this is the biggest thing since—"

"Horace," came Madge's tentative voice, interrupting his reverie.

He started. "Huh? What?"

"Horace, I was just wondering. It wouldn't be really stealing if you took something that hasn't been manufactured yet, would it?"

Horace Niblock's mouth fell open ludicrously. His eyes wandered speculatively to

the shining soup pot on the floor. "Why—uh!" He blinked. "I don't exactly know." Then he fixed her with a scowl. "Will someone—anyone—tell me why women have to go think of things like that? I'll figure it out after dinner. But not until then. Now scoot. Scat! In heaven's name get back to your kitchen before you think of something else."

After dinner, Horace sprawled in an easy chair and started to read the evening paper while Madge washed the dishes.

Suddenly, he shot bolt upright. "Great Caesar!" he gasped.

He read further, then shut his eyes tightly and groaned, "Oh my God!"

In the next second he was on his feet. "Madge!" he yelled, lunging toward the kitchen. "Madge!"

Madge turned from the sink. "What is it? Horace! You're white as a sheet! What's the matter? Are you sick?"

"Sick!" he shrieked wildly, brandishing the paper. "I'm ruined! I'll be prosecuted, incarcerated! Read this!" He thrust the paper in her face.

Madge was patient. "Horace," she pointed out, "I can't read it while you're holding it against my nose."

"Oh," he said. He put the paper into her hands and sank desolately to a chair. "I can't understand it. What could have gone wrong?"

Madge read the paper. The headlines were sensational:

**DISEMBODIED ARM LOOTS
THREE PROMINENT STORES**

**PSYCHIATRISTS SAY
HALLUCINATION**

"Well," she said, brows furrowed, "what has this got to do with us? We haven't lost any arms, have we? And, besides, how could an arm without a body go around and steal? Why, that's just plain silly."

Horace moaned. "Look. Don't try to think I don't want you to strain yourself. Just listen. The arm they saw was mine, do you understand, *mine*. I have made a mistake in the machine. Instead of reaching into the future, I have reached on a curve that brought my arm back into the present. Only in traveling that curve there was a lateral displacement and my arm emerged downtown in our own stores. See what that means? It makes me a thief!"

"Oh-oh," said Madge, the significance dawning on her now. "That's not good, is it?"

"Oh, it's fine," rasped Horace, waving one arm extravagantly. "Just wonderful. I'll spend the rest of my life in jail, that's all."

Madge was taken aback. "You'll do no such a thing," she said indignantly. "I simply couldn't spare you that long."

HORACE NIBLOCK smote his forehead. "I give up," he announced to the ceiling. "I absolutely surrender!"

"Oh, no!" contradicted Madge. "No, you don't. I have just figured the whole thing out. Listen. They don't know it was your arm, do they? No. Well, then, you don't have to be dope enough to tell them. The whole thing is very simple and there is nothing to worry about. We will just put those things back the same way we got them, that's what." She smiled at him brightly. "You see? That's all there is to it; things will be even all around." She added as a sudden afterthought: "Except the paper said that hat came from Antoine's and, after you replace it, I am going right down there and buy it."

Perceptibly encouraged, Horace looked both wondering and triumphant.

"My marital anathema," said he, "your Lilliputian brain has produced an idea. This is impossible and therefore a most wonderful thing. The hat is bribery of the rankest sort, but it is worth it."

Madge cooed.

Downstairs in his basement laboratory the next day, however, with the wristwatch, hat, and soup pot lined up for return, they ran into a complication. Horace, fiddling with the dials of the fourth dimensional projector, shut his eyes and groaned, "The plan won't work, Madge. I used different settings on the locator dial and now I can't remember them."

"And you talk about *my* brain," observed Madge sweetly.

"Oh, I can remember the settings all right," bristled Horace, "but I can't recall the sequence of them, I mean which one I used for which article."

"We got the soup pot first," Madge told him. "Think."

"Yes. That's it," he agreed. "Think." He frowned deeper to show he was thinking. "Let's see, the settings were ninety-five, eighty-five and seventy-five. But in that order? Mmm. No, I started with seventy-

five, then eighty-five, then ninety-five. Or did I? Maybe, I started with eighty-five and—". . .

Mr. Lucas, of Eugenie Jewelry Store, was examining a diamond through his eye-piece when the incident occurred and so, failing to see it, was spared a rise in blood pressure that might have blown his gray top. For at the end of the counter a skinny arm appeared in the air, its large-knuckled hand feeling about and looking crazily like a flapping wing. Finally it touched the counter. On the instant, it disappeared for a moment and then reappeared with a chic, expensive lady's hat, which it placed gently on the counter before once more vanishing. . . .

"That's one," Horace said to Madge as he drew his arm from the projector. "Now, let's see. That next setting, I think, was—"

"Did you get the right place?" Madge was looking over his shoulder.

"Think so," grunted Horace, "but it's problematical. Be still, beanhead, will you?" His glasses slid down his bony nose and he had to lean his head back a little to see. "Uh, seventy-five on the locator. . . ."

There was a lull in business at Antoine's. Miss Hildreth, her shapely figure revealed in every lovely curve by a tight-fitting blue jersey dress, was once again straightening up the millinery counter. Behind her, Antoine was putting a new gown on the wax mannequin, and Miss Hildreth was more than ever uncomfortably aware of his presence.

Imagine that old goat caressing her arm like that yesterday, she was thinking. Queer that he had fainted right afterwards. And that story he told about a disembodied arm, the same story that was later in all the newspapers.

Phooey! The psychiatrists were right: people were always seeing things, not so long ago it was flying saucers. But crazy people had hallucinations, too. Suppose Antoine was crazy? If he is, she thought, he's sex-crazy—he's been ogling me all morning.

At this thought, a fresh wave of apprehension swept over her. She glanced uneasily behind her at Antoine. No. He was still draping that gown on the mannequin. But she wished he wasn't so close to her. . . .

Soon, Miss Hildreth, absorbed in her work, arranged a hat on the display stand and took a step backward to view it.

At this juncture, Horace Niblock, having set the projector's dial, slipped his arm into the fourth dimension to feel around for a

counter on which to put his next article. Almost at once, his eyebrows querked. "What the—" he said. "What's this? It's firm yet yielding and— Omigosh!" He jerked his arm out of the cabinet, his face reddening furiously. . . .

MISS HILDRETH, lovely creature, had just taken that step backward when she performed a series of amazing things. First her eyes went round as saucers—and then abruptly all was activity. Miss Hildreth's mouth fell open, Miss Hildreth's body shot suddenly into a forward arch, and her mouth said, "Eee-yipe!"

Once she recovered her balance, Miss Hildreth was all outrage. She whirled like a wildcat. The unsuspecting Antoine got a wallop alongside his head that knocked his toupee askew. And it did not improve his spirits any, as Miss Hildreth strode indignantly off to get her hat and purse, to see a shining soup pot materialize unthinkably on the hat counter. Antoine's eyes rolled up into his head and once again he swooned away. . . .

"One more to go," said Horace Niblock, all unaware of the commotion his innocent mistake had aroused. He adjusted the dials of the projector.

Madge sighed, "Yes, the watch. I suppose I'll never have a watch like that again." . . .

Mr. Phoebus, floorwalker of the Housewares Department for the Lochwald Department Store, was patiently, and with smooth little gestures of his hands, explaining for the eleventh time to Officer Clancy just what had happened. "The lady was standing there," he said, "and I was standing—let me see—yes, about here; and—"

"Right," said Patrolman Clancy, "an' the soup pot yez lost was here." He placed a beefy hand on the cooking utensil counter.

"Quite correct," nodded Mr. Phoebus. "And I was just telling the lady that—"

Mr. Phoebus choked, his eyes bulged. One hand at his paralyzed throat, he gesticulated wildly with the other. Officer Clancy's head jerked toward the counter just in time to see a skinny arm with a large-knuckled hand lowering an oblong plush box to the counter's surface.

It must be said that Officer Clancy was a man of uncommon courage. He did not quail before this arm without a body. On the contrary he lunged for it—and caught it. The plush box dropped, bounced, went end over end to the floor. Mr. Phoebus, horrified,

staggered backwards. But Officer Clancy, struggling with the arm, finally got it into a firmly vicious wristlock and shouted, "Get help, man! Begorra, I've got it!"

Still speechless with terror, Mr. Phoebus nodded dumbly and turned to scurry off through the gathering crowd of fascinated shoppers. He would remember for the rest of his life the women shrieking and fainting all around him. And later he was to think what a pity it was that all this had not happened in the smelling-salts department. They could have sold out . . .

Reaching into the fourth dimension with the wristwatch, all Horace knew at first was that he was in a violent universe. He felt himself yanked abruptly forward. His round head banged against the cabinet with such force that his horn-rimmed glasses popped off and hung ludicrously from one ear. For a moment Horace was dazed.

"Horace!" screamed Madge. "What's wrong? What is it? What's happened?"

With strong hands rending his arm down at Lochwald's Department Store, Horace made the only intelligent answer possible.

He yelled, "Ow-w-w!"

Madge fussed about him. "What is it, Horace?" she asked intelligently.

Gulping and gasping, Horace managed, "Somebody—uh!—has got—oof!—hold of my arm! Do something! Don't just—*OWWW!*!"

Horace was going through peculiar contortions by this time.

"What'll I do?" wailed Madge. "Walt I know. I'll smash the set! That way—"

"NO!" screamed Horace. "Do you want me going around—yipe!—for the rest of my life with my arm in the—oooh!—fourth dimension!"

Madge considered this. "N-no. I hadn't thought of that. Your right arm, too."

"*Youuuu!*" agreed Horace, squirming. At that moment he was wishing profanely that he had invented a wife-exterminator.

"I know!" Madge brightened, snapping her fingers. "You stay right here till I get back." Her high heels beat a tattoo up the stairs.

When, in a moment, she came back with a carton in her hands, Horace was making faces that would have fascinated Bela Lugosi, not to mention Karloff.

"What," he howled, "in the name of Heaven, have you got there?"

"Lard," said Madge, as though any fool

ought to know that. She opened the carton. "Here. You take a nice big handful in your left hand, then reach into that thingumajig and smear it on the arm they're holding. Catch? That will make it too slippery to hold!"

MOANING, Horace dug into the greasy mess desperately and with a scooped handful thrust his left arm into the cabinet. There was some delay while he groped about, greasing first his captured arm and then, quite accidentally, Officer Clancy's squirming Irish face. Then Horace withdrew his left arm and jerked backward with his body, trying to pull free. Madge was nothing if not cooperative. "Here, let me help," she volunteered. "We'll pull together."

Horace never had time to object. Behind him, with one hand firmly under his chin and the other spread conveniently over his face so that one finger was in his nostril and another in his eye, Madge pulled mightily. For one precarious moment, Horace was foggily uncertain whether he would lose the arm or merely die of a broken neck. He said, "*Glmph!*", which Madge didn't bother to contradict.

Then, all at once, the lard did its work. Officer Clancy's hands slid free. With both Horace and Madge exerting all their strength, the release was violent. They flew backward across the laboratory, Madge fell, Horace fell on top of her and rolled off, banging his head on the floor. The fourth dimensional projector followed suit with a loud crash; wires popped out; condensers and tubes flew and shattered. Finally, when the noise and confusion subsided, a lone unbroken tube rolled slowly round and round at Horace's feet. Madge looked from her completely dazed husband to the wreckage. "Now see what you've done," she said.

Horace moaned faintly.

It was a week later. Publicity had died down, the laboratory had been cleaned up, and all was peace in the Niblock home once more. Horace, one arm in a sling, was downstairs in the laboratory and Madge, upstairs in the kitchen, was blithely cooking dinner. On her face was a fathomless smile. Horace was inventing again, but there would be no more trouble. She knew what he was making this time. It was a three-dimensional box into which, by his own scowling declaration, he meant to drop old and very three-dimensional razor blades.

immortality



By JOHN D. MACDONALD

STEPHEN BRALE glanced nervously at his watch, and made one last, quick tour of inspection. He decided that the deep, native stone fireplace was the best feature of the huge stately room. It was an incredible break to get a chance to sublet the house.

He knew how pleased Jane Torin would be. Maybe her stipulation about not marrying until he had found a place for them to spend their first months was wise. Surely this beautiful home would be more than even Jane had anticipated.

The bell rang and he hurried down the front hall to the door, swung it wide.

"Steve! It's beautiful!" Jane Torin said, and flushed with excitement.

"Shut your eyes, honey. No cheating."

He took her wrist and guided her in. Her long, lovely eyes were shut, her face pale and sensitive in contrast to the mass of red-gold hair.

He shut the door behind her, kissed her lightly.

"No fair!" she said.

Taking her arm he led her into the big living room, turned her about so that she would be able to see the fireplace and the

huge window-seat when she opened her eyes.
"Okay, darling," said Steve. "Take a look."

She opened her eyes and gasped. He was looking at her face with pleased anticipation. To his surprise she turned very pale, her eyes wide. He frowned. "What on earth is the matter?"

"Oh, Steve! It's beautiful! But just for a moment, when I first looked at it I had the oddest feeling. It was as though you had brought me in here before and I had opened my eyes and seen this same room."

"Did we live happily ever after?"

She put her arms around his neck and breathed, "Of course we did, darling!"

He kissed her and said, "You know, maybe that's a good idea. Maybe we ought to go through this routine again and again. Every lifetime we have."

She laughed. "Now you're making fun of me!"

"Of you? Never. And the day after tomorrow I carry you over the threshold."

THEY were the Seven.

Incredibly aged, they reclined in a circle on soft couches in a subterranean room

there are more universes in the cosmos
than Man has dreamt of in his philosophy

far under the tough vitrified skin of the Planet Earth Eighty.

Far above them the tough crust of the planet neared absolute zero. For five thousand years there had been no atmosphere and hence no winds. The dimming sun shone with constantly decreasing warmth.

Beyond the small room where the Seven reclined there was the hum and pulse of power. The soft light that bathed the room gave them their nourishment. Enfeebled by the silent years, they brooded.

The oldest among them was the Leader— forbidden by Law to do other than summarize the arguments of the others. Their huge, naked, hairless skulls gleamed in the soft light. There was no sound in the room. And yet there were words among them. Words expressed in shafts of pure thought— clearer and more shining than words had ever been. For so many hundreds of thousands of years had speech been outmoded that the organs of speech had atrophied.

The soundless discussion had been going on for five years. It was a discussion that deserved proper analysis. It was a discussion that would determine the future of mankind. Though they were old and feeble of body, their minds were the greatest instruments in the millions of years of recorded history.

"We are Man. We have fought through countless millions of years, migrating to green worlds when old ones perished. There are no more green worlds. Our universe fades and dies. Let this then, be the end. Let us, the last Seven of mankind, perish here, considering the deeds of our race, the worlds made and destroyed, the universe plumbed to the outermost edges of eternal darkness. Let this be the end."

Thus was the philosophy of three of the Seven expressed. A philosophy of resignation, of weariness beyond measure.

"Man does not have to perish. Near the fingers of the Leader is the switch that, once thrown, will make worlds green again, make mankind young again. We have looked into the future, my brothers. We know that there is nothing there but death. We have looked into the past and we know that it cannot be changed or altered in the slightest degree. We have the power. We are prepared. Why should we perish?"

Once the peril was known, all the genius of the race for the past ten thousand years had been concentrated on finding a mode of escape from the eventual extinction. As the

universe had faded, so had faded the procreative and regenerative powers of the race. Only the Seven were left. But before the others had died, there had been constructed, on the surface of Earth Eighty, the greatest power source in recorded history. Drawing as it did on the orbital fury of the dead planets, the surviving thunder of the suns, it would concentrate, at the flick of the switch at the Leader's side, all of the remaining kinetic energy of the dying universe.

IT WAS whether or not this energy was to be used, that was the source of the argument.

"It is known that we cannot step backward in time as independent entities. To do so would be to disturb the probability stream, leading to the mistaken concept of tangential worlds. On this same basis, an entire planet, or even an entire section of the universe cannot step backward in time. The universe must be returned as a unit, because the whole is the smallest fraction that can be shifted in the time stream without altering in any way the probabilities involved. I say that it must be done."

The room was silent, each of the Seven concerned with his own thoughts.

"But it is the ultimate horror. It means that all of life and all of existence will be caught up in an enclosed circle with no exit. Should we decide that the switch is to be pressed by the Leader, the universe we know will be returned through time to the earliest days of unrecorded history, the tropic days of eons ago when man was a hairy creature who fought mammoths with stone axes. Through the millions of years the probabilities will remain unaltered."

"Mankind will fight up out of the swamps, will at least break the boundaries of Earth One and expand to the distant stars, beginning to die at the moment of his greatest fulfillment, contracting, decreasing, until at last we Seven will once more sit in this room and be faced with this same problem. And we will once again throw the switch, once again go through the incredible cycle."

"Possibly it is destined. Possibly it is meant that mankind must, through all of eternity, pace this endless circle from birth to death and back to birth again."

"That is mysticism. There is no basis for mysticism. Imagine the incredible horror of every war, every death, every cruelty being repeated an infinite number of times

for all of eternity."

"By the same token, every godlike act of kindness, of selflessness, of human mercy will also be repeated through all of infinity at intervals of billions of years."

Once again the silver flow of thoughts was stopped. It was a million years since the last bit of vegetation had disappeared from the last planet of the universe.

Each of the Seven was lost in his own thoughts. There was no doubt but what the plan would work. The involved astrophysics and mathematics had been checked and rechecked over a five-thousand-year period as the time for decision grew ever closer. Each of the Seven knew that when the decision was made to throw the switch, that same decision would be made each time the time cycle returned them to that room.

At last the Leader sent his thought to all of them.

"My brothers, have you thought that possibly this is not the first time we have met here? Have you thought that possibly we are already in the closed circle and that our decision is inevitable? Have you thought that we have passed this way before? In each cycle, mankind will have no memory of the preceding cycle."

"A few will have such memories, without knowing them for what they are. A strange room that is oddly familiar. Words spoken that awake the deep subconscious stirrings of the race memory. An act performed that is oddly familiar."

The Leader's triumphant thought was like a sharp blade gleaming. "We have all known these things, my brothers. The act is then—inevitable. Do you agree?"

The thoughts came slowly, and at last they were in agreement. Each of the Seven knew at that moment that the switch must be thrown.

"Even this act of reaching for the switch,

my brothers, is oddly familiar to me."

The fear raced through their minds with a touch of fire. The atrophied muscles were not strong enough to throw the switch. The withered fingers touched it. In their minds they felt the agony of his effort. They threw their own strength in invisible silver shafts toward him. Would it end this way? Would mankind die forever because of one ounce of effort? Slowly the switch moved. When it touched the metal stop . . .

Where Earth Eighty had been was but the empty horror of space. The Universe was unlike the most active starmaps. Younger. More vital. Earth One, misted, glowing, verdant, turned lazily in its orbit around the hot young sun. In a cave mouth midway up a vast stone shoulder of a mountain a man sat, biting with strong white teeth as, with the dried tendons of an animal, he lashed a flat hard rock to the end of a stout club.

AS THEY were about to leave, Steve Brale took Jane Torin in his arms and kissed her. He looked down into her face and traced the line of her brow with a gentle finger. "Hello, Mystic," he said.

She looked puzzled, "Oh! You mean about thinking I'd been in that room before? Heavens, darling! Thousands of people get that feeling. Don't you?"

He grinned. "I used to. When I was in my teens. I've outgrown it."

"The first time you ever kissed me, I had the feeling that you'd kissed me before. In some other life maybe."

"Reincarnation?"

"No. Not exactly that. I can't explain it."

"I can," he said.

"How, Steve?"

"Easy. You're a mystic! I told you that once."

"Oaf!" she whispered. He kissed her again and they left together.

THE INCREDIBLE DESTINATION

(Concluded from page 106)

was prospecting in the northern section of the Gulf of California where an earthquake had caused the seas to recede some thirty miles. He found a curious deposit and his party opened a grave.

There was a space ship, badly smashed, and a man in it. No water or mud had reached the interior but the man had been killed in the crash. There were leaded film

cases, an imperishable log and a stack of debris which appeared to be the remains of a strange animal. There were samples of soil and rocks. There was much cargo, too much cargo.

James Dolan had almost made it home. They gave him half a dozen lines in one edition of the World-American. There had been a murder that day.

The ROAD to

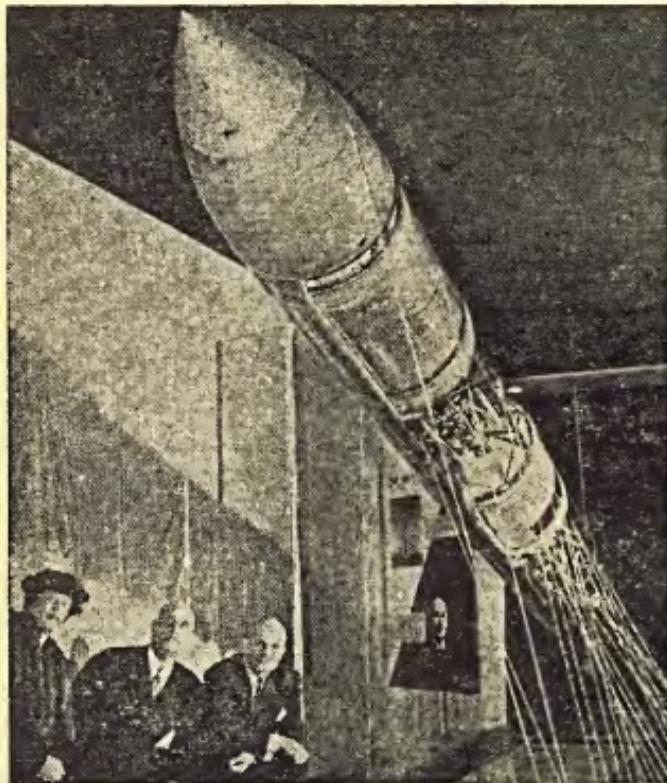
IF COURSE there is no way of checking whether this actually happened but the story goes that the workmen of Boeing's assembly line watched the first Flying Fortress take off from the runway for its first test flight.

When it had disappeared in the clouds an old foreman turned around to go back to his desk and muttered, "Oh well, there goes the last of the small airplanes."

Ten or twelve years hence the newsreel

commentators who now speak of V-2 as a "gigantic missile" are quite likely to say that V-2 and *Neptune* were the last of the small rockets. It is not difficult to prophesy that the next twelve years will bring much bigger and much better rockets. One can even go farther than that and state just what rocket engineers should be able to accomplish during the next twelve years, provided only that they don't run out of funds.

(1) A rocket capable of crossing the



Thanks to the
development of
the "step" or
"booster" rocket,
man has it in
his power to
send a missile
to the Moon
by 1961

General Jimmy Doolittle (right), Dr. Goddard's widow and H. F. Guggenheim, Goddard's backer, examine the pioneer's biggest rocket

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Atlantic Ocean, travelling most of the way high above the earth's atmosphere. In other words a rocket with a horizontal range of 4000-5000 miles.

(2) A manned rocket with a vertical range of 500 miles or more, amounting to about twice the height of earth's atmosphere.

(3) An unmanned missile capable of reaching the moon and crashing there, marking the spot of its arrival for everybody to see.

(4) And finally—with some good luck in addition to unlimited funds—a rocket which will revolve around the earth without ever falling back, presumably to be used as a nucleus around which to build the Station in Space.

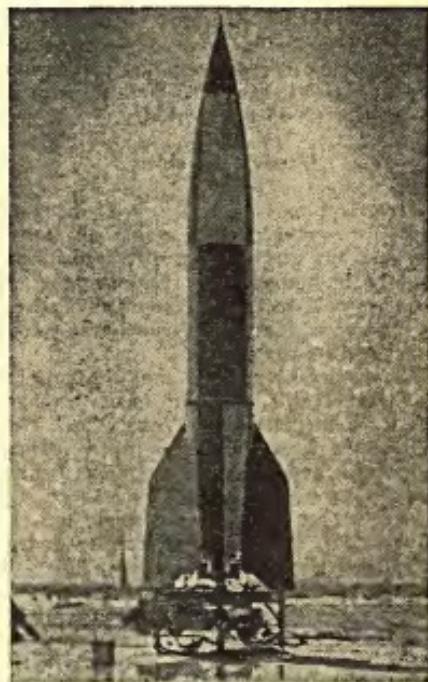
One could prophesy these things merely on the strength of the accomplishments of the last twelve years by what is technically known as "extrapolation." But mere extrapolation is always doubtful and the prophecy actually rests on much firmer grounds than that.

It so happens that the field of rocket engineering is probably unique in that the first practical steps were taken *after* the theory of rocket motion and of rocket performance had been developed quite thoroughly.

Engineering First

In stories it is a logical development that a scientist, or a group of them, evolve a complicated and elaborate theory and that they, after they are quite sure of their results, begin to attack the engineering problems. In reality however it rarely works that way.

The first steam engines were built completely without "steam tables" and other literature which now clutter up the desk of the designing engineer. The theory of airfoils, of airflow over curved surfaces and of aerodynamics in general, did not guide the pioneers of aviation. On the contrary the theory was the outcome of their hit-or-



An ex-German V-2 ready for take-off

miss experimentation. Even in the field of atomic energy the scientists largely made up theory as they went along.

But the theory of the liquid fuel rocket was ready at a time when nobody was quite sure just how a liquid fuel rocket motor would look when finished. And since this theory had proved remarkably accurate so far it may safely be used for some more prophecy.

According to the theory now— But I can't help thinking of the old Olsen and Johnson gag which "H. H. Holmes" retold in his mystery novel *Rocket to the Morgue* and which fits admirably.

It seems that early in their career these comedians had a scene laid in a hotel room

which was invaded from time to time by a drunk in search of a bathroom. When the drunk wandered in for the fifth time he looked sadly at the occupants and asked plaintively, "Are you in *all* the rooms?"

The concept which I have to mention now and on which most rocket prophesy was and is based is something which we'll find "in all the rooms" from now on until either Doomsday or the day somebody successfully applies atomic energy to rocket propulsion. And I do wish to say that I don't think these two will occur on the same day.

Mass-ratio Problem

According to rocket theory (I have to start that sentence over again) all future developments are based on the accomplishment of high mass-ratio. "Mass-ratio" is the mass of a rocket at take-off divided by the mass of what remains, namely the empty rocket and its payload.

The theory now states that the velocity of a rocket will be equal to its exhaust velocity if that mass-ratio equals "*e*." This "*e*" is the base of the so-called natural logarithms and written down in figures amounts to 2.71828—or 2.72 for short.

I know that this does not sound too exciting at first glance but we have to understand this relationship because we'll find it "in all the rooms." It controls everything else. The performance of a rocket is entirely bounded by the highest velocity which it can attain. And the highest velocity which the rocket can attain is determined by the exhaust velocity which its fuel will provide and by the fuel load or the "mass-ratio."

Let's look at an example. Supposing we want to build a rocket which can reach an altitude of 300 miles vertically when used as an instrument carrier. The same rocket would have a range of twice that figure, 600 miles, horizontally when used as a missile.

Now it can be established—I am skipping some three pages of involved mathematics at this point—that the rocket has to have a velocity of just about ten thousand feet per second for this job. If we had a fuel which has this exhaust velocity the rocket would have to have a take-off weight of 27.2 tons if ten tons of empty rocket plus payload are to reach the target.

As implied by the term "if we had a fuel" present day fuels do not provide such an exhaust velocity. The V-2 motor produces

about 7000 ft/sec. and if anything else does better than that it is a military secret. But we'll assume that we don't even get 7000 ft/sec. but only 5000 ft/sec. exhaust velocity.

The rocket that will carry 600 miles horizontally could still be built, but it would have to have a higher mass-ratio. The answer in this case is $e^x=7.4$. The rocket would have to have a take-off weight of 74 tons in order to get ten tons of empty rocket plus payload to the target.

A Tricky Business

The requirement of a high mass-ratio leads to all sorts of neat little tricks. The first liquid fuel rockets, for example, very simply had two tanks, one for the oxygen and one for the fuel. Then nitrogen pressure was put on both tanks and that pressure forced the two liquids into the rocket motor. The pressure used, incidentally, was about 300 lbs. per square inch.

It worked nicely but of course the tanks had to be strong enough to stand that pressure, with a comfortable safety factor added for the sake of those who handled the rockets. This naturally meant that the tanks were quite heavy and that the empty rocket weighed a good deal without having a really high fuel capacity. In short it could not have a good mass-ratio.

What to do about this difficulty was realized before anybody ever built a liquid fuel rocket. The thing to do was to build the tanks just strong enough to hold the fuel and to supply the necessary pressure for feeding the liquids into the motor by means of pumps.

But pumps are not weightless, the scheme would be advantageous only if the saving in tank weight was greater than the added pump weight. Hence pumps could be installed only in a big rocket, the bigger the better. The first rocket with a pump was Dr. Goddard's rocket of 1935. Of course V-2 has pumps and so does *Neptune*. But this means the mass-ratio of V-2 could be "upped" to about 3:1 and a mass-ratio of 7:1 or 8:1 will surely be realized in the near future.

Why Not Increase Velocity?

At this point somebody might ask with full justification why the rocket engineers do not simply strive to increase the exhaust velocity. The answer to that question is that they would if they could. But unless and

until somebody succeeds in utilizing atomic energy for rocket propulsion there is very little leeway. The exhaust velocity of a fuel and oxidizer combination is given by the chemical energy tied up in those fuels.

All the combinations in use (and naturally the experimenters picked the best they could find) show a theoretical maximum of about 14,500 ft/sec. Half of that has been actually obtained and one may hope that it will ultimately be about two thirds of the theoretical figure or about 10,000 ft/sec. True, hydrogen used as a fuel promises some 17,000 ft/sec. in theory and practice may squeeze out some 12,000 or even 13,000 ft/sec.

But hydrogen is so light, even when liquefied, that it is quite bulky. Furthermore it cannot be used for cooling the motor. The two disadvantages of higher tank weight and of a third liquid for cooling the motor would probably eat up most of the advantage of the higher exhaust velocity.

It may not be apparent on the surface but in the foregoing I have severely limited my own prophesying. I stated a few paragraphs ago that one might hope for a mass-ratio of something like 8:1 and I said in the preceding paragraph that an exhaust velocity of about 10,000 ft/sec. would hardly be surpassed.

If you combine these two figures you get the result that the maximum velocity one might expect from a rocket would be 20,000 ft/sec. since the mass-ratio of 7.4:1 results in a rocket velocity of twice the exhaust velocity.

Back to V-2

I consider myself temporarily "caught" at this moment and have no other defense than to point out that such a rocket would rise to an altitude of about 2250 miles! And, since the horizontal range of a missile is twice that of the maximum altitude reached in a vertical shot, the same rocket would have a horizontal range of 4500 miles! This still assumes that the earth is flat and since it is not flat, as everybody now learns even before going to grade school, the range would be longer than that!

Still, we would be stuck with a "mere" 2250 miles of vertical range and some 5500-6000 miles horizontal range if the rocketmen did not have an additional trick up their sleeves.

To understand this trick we'll fall back on

V-2 once more, not because it is the best of all possible rockets but simply because it does exist and thereby provides some substance to our reasoning. In round figures the V-2 rocket weighs 3 tons empty, carries a one ton warhead and a fuel load of 8 tons, so that the take-off weight is 12 tons.

If that one-ton warhead were discarded for another ton of fuel the rocket would obviously climb to a higher altitude since that change (assuming it to be technically possible) would improve the mass-ratio from 3:1 to 4:1.

Now let's try something else. Instead of taking off one ton of warhead and putting in one ton of fuel, we'll take off one ton of warhead and substitute another smaller rocket weighing one ton.

Which one would go higher—the rocket with the somewhat improved mass-ratio or the smaller rocket which was not only carried high by the bigger one but which also started out with the velocity reached by the lower rocket? Even with any calculation it is obvious that the smaller rocket would go higher by far.

Step Rockets

Such a combination of smaller rockets carried by bigger ones is called "step rockets." Historically the first step rockets were built in about 1700 by fireworks-making artisans who wanted a nice display. The principle was then used again in 1855 by the British Colonel Boxer for a line-carrying rocket, was patented in 1911 upon application by the Belgian inventor Dr. André Bing and patented once more later on upon application by Dr. Goddard.

But the true beauty of the thing does not seem to have been realized prior to Dr. Goddard. It is that the maximum velocity of the "last step" is the sum of the velocities of the single steps. Or, if you think of mass-ratio, that the "ideal" mass-ratio of a system of step rockets is the *product* of the single mass-ratios.

The introduction of the step principle is literally a means of spreading the required mass-ratio for a certain job over "several rooms," all of them simultaneously occupied by the same concept.

At about the time of VE Day the Germans were ready to go ahead with a rather large step rocket which was unofficially known as the "American Rocket." It was a modified

V-2, designated A-9, which was to be carried off the ground by a "lower step" (called A-10) with a take-off weight of 85 tons!

This would have been a 5000-mile missile, even though the exhaust velocity was not more than 7000 ft/sec. and the mass-ratio of each step only about 3:1. But because there were two steps, the combined or "ideal" mass-ratio would have been roughly 9:1 and that would have done the job.

Astounding News

Because of VE Day the combination rocket A-9+A-10 remained a project. But recently the rather astounding news has been released that the Germans did have a true three-step rocket during the last days of the war. The missile was a solid fuel rocket with the code-name *Rheinbote* ("Messenger from the Rhine") of which about twenty were fired into Antwerp from the vicinity of the small Dutch town of Zwolle in November 1944.

The missile was cleared from its launching rack by a booster unit with a burning time of only one second. The three steps composing the missile burned in succession, Step No. 1 for five seconds, Step No. 2 also for 5 seconds and Step No. 3 for 4.5 seconds, discarding the empty hulls of the burned out steps in succession.

The complete missile was 37 ft. 5 inches long and weighed 3773 lbs. The empty third step and the bomb it carried weighed together 297 pounds and arrived at the impact point, 137 miles from take-off, after 260 seconds.

Of course it was a somewhat high expenditure of powder and ingenuity to transport a warhead weighing by itself just 88 pounds, but it proves, if anybody should have doubted that point, that step rockets can actually be built.

The Next Twelve Years

After all these technicalities I can go back to my four predictions, namely that the next twelve years should bring a 5000 mile missile and a manned rocket capable of rising to an altitude of 500 miles or more.

As we have seen in the meantime these two predictions can be fulfilled if rocket engineers succeed in raising the exhaust velocity from the present 7000 ft/sec. to 10,000 ft/sec. and the mass-ratio from the present

3 : 1 to about 7.5 : 1. In both cases single rockets were silently assumed. In reality the step principle would almost certainly be employed.

Before we go on to prediction No. 3, the unmanned moon missile, we have to devote a few paragraphs to a side issue. While the long-range missile will crash, the high altitude rocket would have to be landed.

How does one land such a junior spaceship?

Landing Problems

In trying to answer that question we have to consider a few facts. One is that we are probably only trying to land the upper step of a two-step rocket. The other is that that upper step will be rather light, since most of the fuel has been used up. The most likely method would be to equip the upper step with short stubby wings. Wings of any kind do not help a rocket at all in taking off—in fact they are a hindrance.

But their usefulness is mostly caused by the fact that the rocket is compact and heavy at take-off and is to reach a high velocity as fast as possible if it is not to waste fuel. With a virtually empty rocket the case is somewhat different. Because only the upper step is winged the wings would cause no trouble at take-off—they would be somehow hidden in the bulk of the lower step.

When the lower step drops off the presence of the wings won't matter because the rocket will be in almost empty space. If still in the atmosphere that atmosphere will be very tenuous and will, furthermore, be traversed vertically at a fast rate. But on return the wings, supporting nothing but an almost empty metal shell, will brake the fall.

It may be that such a rocket could be actually landed like a high-speed glider but it is not likely. Judging by present-day knowledge the most likely thing will be to break the rocket up once more when its glide path has carried it to, say, ten miles above the ground.

Then the very small cabin can be separated from the remainder of the rocket and land by parachute while the rocket is left to crash. Or else the most valuable part of the rocket, motor and pumps etc. could be entrusted to another parachute while the remainder, mostly just formed sheet metal, is blown up and left to flutter to the ground in pieces.

The additional possibility of landing such a rocket on its tail, using up a fuel reserve kept for this purpose, should be kept in mind. With the aid of automatic gyro instruments which keep the rocket vertical this should not present impossible obstacles.

And now we get to the moon missile.

Moonward Bound

Because of the rather complete development of rocket theory we can forecast the performance of a moon missile with a good amount of detail. The whole missile would have to be lifted off the ground by a booster unit and to be carried first to an altitude above which air resistance does not matter any more, say fifty miles. Then the missile itself would have to accelerate to a velocity of 36,000 feet per second.

In the course of this maneuver at least one lower step would be shed so that only the uppermost step will actually attain 36,000 ft/sec.—fortunately far above the atmosphere because the air resistance for even half of that velocity would be a horrible thing to contemplate. If the accelerating was done at an average rate of 4 g's the total burning time would amount to about 500 seconds.

The moon missile, endowed with 36,000 ft/sec., would continue to rise after the fuel supply was exhausted. But it would not maintain this velocity—the gravitational attraction of the earth would steadily reduce it. The missile would lose some 30 ft/sec. at first and this loss would gradually diminish as the distance between missile and earth increased and the gravitational influence was consequently weakening.

Even so the earth's gravity would succeed, in the course of time, in nibbling the missile's velocity down to very little. After 300,000 seconds it would be almost zero. The important point is that it must show a small remainder, or the experiment turns into a failure—because after 300,000 seconds the missile has reached the "line" where the gravitational attractions of the moon and earth balance each other.

If gravity wins before the missile reaches that line it will fall back to earth. If the missile has only a small amount of velocity left it will cross the line and fall to the moon.

Supposing that it crossed the line with about two inches per second it would need 50,000 seconds to crash on the moon, with an impact velocity of close to two miles

per second, composed of the missile's motion due to the moon's attraction and of the motion of the moon itself. Since 351,000 seconds are $97\frac{1}{2}$ hours the whole performance will have taken just over four days.

Plenty of Light Needed

Dr. Goddard, in calculating a similar example, suggested packing the nose of the missile with flashlight powder, so that the impact would cause a bright flash which could be seen from earth by means of a telescope.

But I think it more practical to provide a payload of some white powder, like ground glass or plaster of Paris to be blown around on impact by a small explosion. This would produce a permanent bright spot, even if the white powder should be so thinly dispersed that an observer walking over it on the moon would not be able to discover it.

How large would this missile have to be?

That, of course, depends on an enormous number of different assumptions, so that only the most general round figures could be given. If we say that the exhaust velocity has been pushed up to 10,000 ft/sec. in the meantime, the rocket proper would need a mass-ratio of about 36 : 1 but would have to be fortified by a very substantial booster unit.

Of course one cannot build a rocket with a mass-ratio of 36 : 1 as a single rocket. It becomes possible as a two-step rocket, each step with a mass-ratio of 6 : 1. If we allocate only 5 pounds for white powder, explosive charge and impact fuse we'll get a 60-ton missile, probably requiring a 150-ton booster.

The figures are big but it could be done. Not with the resources of the present-day status, but with the status that we can hope to attain during the next twelve years.

But those who'll have to make the decision on how the money is to be spent may decide that the moon missile has mainly publicity value while the same amount of cash "more or less" might buy what is now known as an "orbital rocket," a rocket which circles the earth like a small moon about 600-700 miles from the surface.

By itself such an orbital rocket would be of little use. But it may be utilized as the forerunner and cornerstone of the Station in Space.

And that is another story.



Before making his journey to Earth, Carden Layne had

CHAPTER I *A Title Changes Hands*

IT WAS, for Layne, abeautifully easy. The Frenchman was a master boxer who could hit like a middleweight blacksmith with either hand. But Layne picked off his hardest and fastest punches with his gloves as easily as a hungry twelve-year-old picking cookies from a pantry shelf. Now and again, when the Frenchman slowed in frustration, Layne would step in, his forearms and gloved fists a blur, to deliver a quick succession of jolting blows whose speed precluded any defense.

He could, he knew, have knocked out the

Frenchman in the first round—he could probably have knocked him out walking on his hands and hitting with his feet if the rules had permitted such a procedure. But he had reasons for not wanting to make his win too spectacular. He had no way of knowing how spectacular he was. How could he? He was from another world and new to this one.

"Alien!" he thought angrily when, in the fourth round, his foot slipped in a small pool of the Frenchman's blood, permitting that rugged and baffled fighter to plant a sharp left

Carden Layne, the Man From Another World,

Forgotten Envoy

a novelet by

SAM MERWIN, Jr.



been briefed thoroughly on his duties by Ptrek scientists

book against the side of his face.

It stung him and rage boiled up in him—rage and repugnance—and he forgot the need for caution, the careful withholding of his full abilities that had enabled him to obtain this title bout in the Garden with the Champion. The emotion was new to him and he was utterly untrained in restraining his reaction.

Hardened sports-writers at the ringside and veteran fight fans far back in their allegedly "ringside" seats alike knew that they were witnessing something out of the ordinary. The speed and fury of Layne's attack,

the incredible rapidity of his blows, were too fast for the eye to follow.

In less than twenty seconds the Frenchman was lying on his face on the canvas, face battered to a bloody pulp, three ribs showing jagged broken ends through the skin of his side. It took a frantic referee fifteen seconds to wrestle a furious Layne to a neutral corner. If it had taken five minutes it would have made no difference to the Frenchman. He was through for the night—and for a great many days and nights to come.

Later, when the slow motion movies of the

Starts His Earthian Career as a Pugilist!

fight were shown, experts recalled the second Louis-Schmeling fight, when the Brown Bomber landed twenty-two punches on the anguished Uhlan's torso while the German was falling to the floor of the ring. Layne, the pop-eyed experts saw, hit the Frenchman exactly thirty-one times from the moment he started to topple until he was down out of reach.

But that, of course, was later—much later.

Layne didn't come out of his fog of rage and sense of defilement until the white shirted referee was holding up his hand and announcing him as the "new Middleweight Champion of the World." All around him these—people—these beings he found so disturbing and interesting, were screaming like the mad and tortured creatures from the shadowland borders of his own home world.

HE SHUDDERED at their outcry and slid out of the embrace of Packy Gillis, his stocky little manager; who was capering around the ring like a maniac and trying to embrace him in his joy. Over and over, Packy was shouting:

"You done it, kid, and now we're gonna hit the big dough! You done it, kid!"

He felt a curious sickness that made his knees weak and told himself that the overwhelming emotional drive which had caused him to forget all caution and rip so savagely into the Frenchman was bad for him. But so strange had been the sensation, so violent the after effect, that he still felt ill and lost.

He was not himself until Packy and wizened little Luiz Lopez, his trainer, had at last cleared his dressing room of all the howling mob that came bursting in on their heels from the ring—all except Gail Atwater, of course. He shook his head to clear it of echoing sounds of voices, blinked to shed the blinding afterglow of the flashbulbs that had popped in such profusion.

"You blew your top in there, Carden," the girl said in the low, rather husky tones that did such disturbing things to him. There was speculation in the frank appraisal of her green eyes. "I didn't know you had it in you."

"Yeah," said Packy in his nasal accents. He laughed boisterously, as high on vicarious victory as he had ever been on Irish whisky. "It's a good thing you stayed under wraps till tonight or we'd never had gotten the bout."

"He hit me," said Layne as if his reaction

had been the most natural thing in the world—which it might have been had *this* been his world.

"It's a good thing he did. He was winning on points till then," said Packy.

"You frightened me a little, Carden," said Gail, coming close to him and putting her perfumed hands on his bare shoulders. Somehow, with her, he didn't mind the contact—quite the reverse. It had been that way ever since he had met her at the sign-up party six weeks before. It was another thing to bother him.

"You don't have to be afraid of me," said Carden Layne, putting his own long-sinewed arms around her softly slim waist. She was almost as tall as he, with a fascinating figure, a fine boned intelligent, passionate face and long silver red hair that fell smoothly to a gentle roll on her shoulders. She was, she told him, an actress, who had yet to become a success.

Because of the rigors of training he had had little time to share with her, a fact for which he did not know whether to be glad or sorry. She disturbed him and anything that disturbed him was potentially dangerous. They had told him about women, of course, those who had briefed him so long and painstakingly for his mission on Earth. But there was much—so much—they hadn't understood.

"You go easy on the Champ," said Packy, his grin not quite masking the worry in his eyes. "We got the title and it's no time to get out of shape. We come up so fast we ain't had time to copper our hope chests yet."

"Never seen nothin' like it," said Luiz Lopez, the little trainer. "Just that style and speed and he comes out of nowhere to cop the big one."

"We'll have a little time together," said the girl and there was a plea in her voice, in her eyes, in the curves of her body, that spelled heaven.

"Sure," said Layne, pulled her close and then letting her go. "We'll have a little time." He disengaged her arms from his neck and moved toward the shower in silence. He didn't have the heart to tell them this was his last fight. He didn't know it was heart, of course. He told himself it was expedience.

They were there when he came out, straightening the tie that still was a strange constriction about his throat. In his brief career as a fighter he had not had to wear

ties often. But on the night of his winning the championship it had seemed oddly correct to dress up a little. The flannel trousers and jacket felt strangely comfortable for alien garments so briefly worn.

He knew the men spelled danger, disaster perhaps, the moment he saw them. There were two of them and, for humans, they looked hard and alert. They wore inconspicuous dark suits and had soft hats with snap brims. Though they did not actually look alike, there was a similarity of poise and movement about them that made them seem almost like twins. The taller of them nodded to him curtly.

"Mr. Layne," he said, "we have orders to take you with us."

"What is this?" Carden Layne looked at his manager in surprise. He knew, of course, that it meant exposure in some form, exposure and the inevitable consequences. But he had been trained to carry through as long as was possible.

"I dunno," said Packy Gillis. "They're G-men. Gee whiz, Carden, are you hot? If you are, don't say a word until I get a mouthpiece to you."

"Hot?" said Layne. He knew what it meant of course. He was hotter than any so-called criminal alive. He looked at the uninvited arrivals, who were posted at either side of the one door into the corridor outside. Swiftly he calculated his chances, noting the bulges beneath the unobtrusive jackets. They had their absurd weapons, of course. Absurd but deadly to himself for all that. The very nature of his role and mission had made him vulnerable.

HE WOULD have to wait to make his break. The decision made he relaxed and smiled at Gail, who was leaning against the rubbing table, looking very scared. He went over to her and gave her a chin-up routine and was surprised to see the tears in her eyes. A sudden protectiveness swept through him, a desire to comfort her and tell her that there was really little to worry about—yet.

"You didn't—you couldn't have done anything wrong, Carden," she said.

"Of course not," he told her. He tried to remember the little he knew of the absurdity called law. It was the existence of law, as much as it was the existence of the records, that had caused him to be sent to the United States. In most other countries, if he were

discovered, they would move with more dispatch.

"What am I supposed to have done?" he asked the leader of the men quietly. He didn't know it, of course, but there was an inhuman flatness to his expression, a flickering wariness to his gaze that made him look deadly dangerous—and guilty.

"You'll find out," said the man. "Our orders are to take you with us."

"I'm going too," said Gail, thrusting herself forward with sudden determination. "I don't care what he's done, he—he needs someone on his side."

"We were going to ask you to come," said the leader in his unemotional voice, though his eyes registered approval. "Mind you, you don't have to—"

"But I want to," said the girl. "I want to if Carden wants me to."

He looked down at her, touched as he had never been touched. There was a sudden and unaccustomed lump in his throat that made his voice unsteady.

"Sure," he said. "Sure, Gail, honey. There isn't going to be any trouble." He knew he shouldn't let her come but once again he felt the confusion of emotional elements he had neither the means nor training to resist.

There were more of them outside—not that they were conspicuous. But they had to be there or Carden Layne and Gail would never have been slipped through the still milling throngs in the corridor and around the Garden so easily. Before Layne could muster his poise he was seated beside Gail in the glassed-in rear of a limousine that was proceeding with silky smoothness through traffic.

He leaned forward as they crossed the tracery of the George Washington Bridge and tried the handle of the near door. It did not respond to the deceptive strength of the tug he gave it, nor could he lower the window. A glass partition, which he sensed to be bullet proof, separated Gail and himself from the two men in the front seat. Behind them another limousine followed closely.

"Darling," said Gail, huddling close to him. "I'm scared. What's it all about? You haven't done anything—well, criminal, have you?"

"Not yet," he said grimly and was oddly glad that he spoke the truth. He let the girl snuggle close and leaned back against the cushions. The smooth speed of the car made

him feel almost as if he were flying. When he looked outside to see the lights of the Jersey approaches flashing past he felt a trifle oppressed at the sense of speed. There had been nothing to see on his previous journey—the one that had brought him to Earth from such unimaginable distances.

"Do you know where we're going?" the girl asked him, her voice small and close to his ear. He pulled her to him as he had seen men do in the movies and felt a sudden thrill pervade him at the live softness of her lips under his. The confusion which had muddied his thinking and reactions increasingly of late returned in manifold version and he saw that his hands were trembling.

"I don't know," he replied belatedly, using the excuse of speech to break the disturbing embrace. "And our friends up front aren't very communicative."

"I won't let anything happen to you," the girl said in a fierce whisper.

He patted her shoulder with a hand once again made steady by rigid control. He even laughed a little though he was not yet accustomed to laughter. She might be alien but she was so soft and sweet, so innocent of his real motives and purposes. He thought of the one who awaited his signal in the unimaginable craft so far above the thin envelope these creatures spoke of as atmosphere.

His abstraction endured until he felt the girl stiffen and realized that they had left the highway to pass through a large, well guarded iron gateway and were proceeding up a long, poplar lined macadam driveway. They crested a low hill and before them the lights of a long low mansion twinkled in greeting.

There came the baying of a pack of large hounds from the middle distance as the car pulled to a halt under a porte cochere and the door was opened. He wondered about dogs—they hadn't been part of his briefing and he had had little chance to observe them in his few short months on Earth. Like every other gap in his briefing, they frightened him a little.

The other car had pulled up behind them and he and Gail were escorted to the stately double front door of the mansion by a small squad of government agents, affording him no chance of escape even had he wished to make a break for it. He wasn't sure that he wanted to, for this strange ride with its opulent conclusion did not fit into his idea of an arrest. And there were the dogs!

A stone-faced servant in frogged blue livery ushered them into a large entrance hall whose floor was of marble laid out in black and white squares like a checkerboard. The butler whispered something to the leader of their escort and the G-men did not follow them when they were ushered through another double door. They passed through two more magnificent chambers before they reached a dropped sun porch which seemed to occupy one whole end of the mansion.

There, from behind a desk, a tall, lean white haired man with a long, lined face rose to greet them, revealing a hundred wrinkles as he smiled.

"Welcome to Earth, Carden Layne," he said in a deep and mellow voice. "It is good to know that Harman Layne's son is still, miraculously, alive."

CHAPTER II

Man With No Past

FOR a moment or two Layne remained motionless, stunned with surprise.

"I beg your pardon," said Layne. This was incredible—unless it were the first overt move in some well-laid conspiracy which had been brewing underground against him for weeks. If he had had any idea that taking up prize-fighting would make him so conspicuous, he'd have managed some other way. But those of his fellows who had briefed him so carefully for Earth had known nothing of money. And his physical conditioning had made it the most simple method of support.

"Who are you?" Gail Atwater asked their gray haired host bluntly.

"Dr. Raymond Barnett," he said, nodding in courtly fashion toward the girl but scarcely removing his eyes from Layne. He added, "The likeness is unmistakable—and coupled with the name. When I saw you in the television screen I knew, of course. Harman had no family. You had to be his and Jane's son."

"Just a minute," Gail's green eyes had widened as memory came flooding to her aid. "You—you're Dr. Barnett the physicist, the man who invented—" She hesitated, added, "—just about everything Edison and Einstein didn't think of."

"You make it all sound absurdly easy, my dear," said the scientist, his smile widening at

her recognition. "The Sunday supplements have been kind to me."

"But if you're that Dr. Barnett," said the girl half angrily, "why the pinch? What's your interest in Carden anyway? Why him?"

"I'll try to explain," Dr. Barnett said gently. He nodded toward a large television projector designed to cast its pictures on a screen which hung against the wall opposite his desk. It was obviously something far superior to the 1978 models which were currently on the market. As the most distinguished scientist since Albert Einstein, Dr. Barnett rated the most modern in all such developments.

"When your Carden Layne—" This with an inclination of the head toward the new champion, who was standing on guard as warily as a faun aware of unknown peril—"was introduced in the ring, I spotted it at once. The resemblance was unmistakable even to a mere dabbler in anthropology like myself. The formation of the head above the zygomatic arches, the shape of the ear lobes, the formation of the lower mandible—to say nothing of the general unmistakable likeness. I knew instantly that I was looking at the son of Jane and Harman Layne."

"I'm afraid it's just chance," said Carden quickly. He knew of Dr. Barnett, of course—not only during his brief stay on Earth but from the exotic printed matter he had come to know as books during his education elsewhere. He was going to have to spike this development and quickly.

"You see, I was discovered on an orphanage doorstep near Des Moines." He told the fiction glibly for he had long "arranged" an Earthly origin for himself. He added what he thought was a neat touch. "As a matter of fact I took the name Layne because of my resemblance to the man you called my father."

Dr. Barnett looked puzzled and a trifle tired. Gail had been caught in the conversational crossfire long enough. She stepped forward once more and said:

"Just a minute, Dr. Barnett! Why should Carden's being this—this other Layne's son make him important enough to put G-men on his trail?"

"Because," said Dr. Barnett, his eyes suddenly dark and brilliant against the faded velum of his skin, "if he is, as I fully believe, the child of Jane and Harman Layne he is the first known Earth human to have been born

in space.

It was too much for Gail. She found the nearest sofa, her legs unsteady, and sank into its softness, disbelief on her every pert feature. She looked at Dr. Barnett as if he were a madman. Layne, watching her closely, saw this incredulity fade as she evidently remembered who their host was, then saw her eyes turn toward himself, saw affection and then a new and more disturbing incredulity stir beneath it. He gave her what he hoped was a smile of reassurance.

"It won't take long to straighten this out, honey," he said to her. But he could not meet the fixity of her regard, turned uneasily back toward the scientist. "I'm greatly honored, Dr. Barnett, but isn't this whole business just a little—well, it's hardly a proper celebration for a new champion."

"My sincere apologies," said Dr. Barnett, waving Layne to a seat beside Gail on the sofa. "Of course it isn't. Your performance in the ring was remarkable, young man, truly remarkable." Layne didn't like the speculative look in the wise old man's eyes as he said this.

Dr. Barnett pressed a hidden button on his desk as he sat down. Seconds later the gold frogged butler appeared.

"Bollinger, Jenkins," said the scientist. "The Nineteen Seventy-One *brut*." When Jenkins had gone he added, "Both of you must accept what hospitality I can offer. Champagne is the wine of conquerors—and their ladies. As for me, I am on the threshold of either the most glorious moment of my life—or its worst. In either case, I shall need a stimulant though I shall only enjoy it in the one."

"Thanks, Doctor," said Carden. "But I'm afraid you'll be disappointed."

"We'll soon know," said the scientist. "As it happened I had some rather distinguished friends here to view the fight on my new machine. One of them is high in the Department of Justice. When I told him my suspicion, he at once set the wheels rolling. We'll soon know what the score is."

SILENCELY they drank champagne and Layne found he cared little for the unfamiliar beverage. But he drank because he was supposed to, even though he could sense its relaxing effect upon the guard he could never afford to let down. Then Gail, who was regarding him, when she thought he was not aware of the fact, with a new furtive-

ness, asked Dr. Barnett again what it was all about.

The famous scientist smiled. "It is not a new story," he said, "although it is a forgotten one. It is, you see, a story of failure, a failure in which I, alas, played a small part. You see, back in Nineteen Fifty-five—a trifle more than twenty-three years ago—we thought we had mastered space travel. It was not publicized—our relations with the Russians still demanded strict secrecy. And its failure has resulted in our not following up what I believe to be the one true road.

"He paused, his eyes once more glowing with their amazing intensity, then went on. "It should not have failed," he said passionately. "Although the *Pilgrim*, with its two gallant passengers—two who I have reason to think became three—vanished like that—" He snapped his fingers to indicate the suddenness of the disappearance—"I have never been able to believe that it did fail.

"We were experimenting with tremendous forces—forces of which we know little more today. Supersonic flight was a reality and, with sufficient screening through the new and comparatively light duralead, we could mount atomic motors in comparatively light ships. But this very fact made us overreach."

He paused again and motioned Layne to refill the glasses from the huge magnum that rested in its bed of ice, swaddled in a fine damask napkin. He seemed to be recalling forgotten hopes, forgotten dreams, forgotten faces. "We tried to do too much at once," he went on regretfully. "We had the planets in our grasp, but he had reason to think that none of them would serve humanity. And Dr. Layne and I had developed a principle which, with sufficient power, showed promise of going much further. We planned to reach Alpha Proxima. In short, we reached for the stars, and to the best of our knowledge, we failed."

"Gosh!" said Gail, eyes as round as a little girl's. "What happened?"

Dr. Barnett shrugged his massive shoulders. "Who knows? Oh, we had it beautifully planned. We had the *Pilgrim* packed with instruments, of course—and we had atmosphere and stratosphere ships placed at various levels to watch her passing up to a height of thirty miles. And there were Jane and Harman."

"How did a woman happen to go?" Gail asked. "She must have been brave."

Dr. Barnett chuckled. "I doubt if she ever thought much about it," he said. "She had,

in some ways, the best mind of the three of us. She had worked on the project from the first and we couldn't have kept her off. She was the ablest astrogator on Earth, she knew every bit of the plan and she loved Harmon."

"I think I understand," said Gail quietly, her eyes on Carden Layne.

"I think perhaps you do," said the scientist. "At any rate, she and her husband went alone. They had no room for any others or I'd have been with them. As it was we computed that, even if our device worked, they'd be in space for at least three years. They took with them supplies for ten."

"What was the nature of this—this drive of yours, Doctor?" Layne asked. He sat quietly, hands on his thighs, trying not to reveal his interest.

"An odd question from a pugilist," said Dr. Barnett with a smile that was faintly sardonic. "It was a development of the curved space theory of Einstein. It involved certain of the 'great circle' principles of global navigation. It involved an instrument which could cut chords across the arcs of bent light."

"Perhaps," said Layne, "it cut through the arc." He wished, as soon as the words were out, that he had kept his mouth shut. His host regarded him oddly.

"Perhaps it did," he said. "It didn't occur to us until long afterward, when the whole project was dead and shelved." He smiled again and nodded to himself, paused to sip from his wide glass. "At any rate, when the *Pilgrim* took off from White Sands—we still used the old rocket base then—it vanished."

"And neither they nor the *Pilgrim* were ever seen again?" said Gail.

"Never," said Dr. Barnett with a weary gesture that bespoke finality.

"Then," said Layne, who had been feeling the coils of this unexpected trap coiling ever tighter around him, "your idea about me is obviously wrong. Perhaps, in some strange way, I happen to look like them—a freak of heredity."

"Oh, it's manifestly impossible," said the great scientist. He paused and added, "Except for one slim pinpoint of possibility. You see, Jane told me before the *Pilgrim* took off that she expected to have a child. She was willing to take that chance—to convert her love for Harman Layne to the ends of science."

"It sounds—horrible, somehow," said the girl with a quick shudder.

"No," said Dr. Barnett, "for their loves for science and one another were their lives. And since deep space travel must involve great lengths of time, as well as distance, the ability to bear and rear a child in space could be a vital factor. And when colonization of other planets in other Systems becomes fact, as some day it must, it may well be the decisive factor."

"Interesting," said Carden Layne, "but it still doesn't tie me in."

FOR a moment or two the aged scientist regarded him, then shook his head.

"Perhaps not," said Dr. Barnett. "But, you see, if Jane Layne's child were born and lived—and if he were a male child—he would be almost exactly the age you claim. Taken with the resemblance and certain other factors—" He paused to study Carden Layne narrowly. "We'll soon have our answer."

"But," burst out Gail, "if the *Pilgrim* was destroyed in the take-off—"

"The *Pilgrim* was *not* destroyed," Dr. Barnett spoke quietly. "She took off all right at the correct acceleration. Not until the special drive was applied did she—vanish. And, as Mr. Layne has already acutely suggested, she may not have been destroyed. She may have cut through a chord of the curve of our space at too great a velocity, have become a tangent and entered some universe of which we know nothing. She may even have come back."

There was a long silence after this. Layne wished heartily that he had never blurted forth his suggestion. He studied the scientist, wondering how to deal with him. Violence would do his cause no good—not now. He began to tabulate possible courses of action to save his mission and his own kind—and then jumped as did Gail when the telephone on the desk shrilled its summons.

Dr. Barnett picked it up deliberately, put the handset to mouth and ear. His voice was low, almost a murmur, as he made himself known to the talker on the other end of the radio beam which had long since replaced

cumbersome wires. Layne strained his ears but the Dr. said nothing of import. During most of the five full minutes the call lasted he was listening.

Finally he replaced the handset on its cradle and regarded Layne with a faint smile which had a sardonic twist. His voice, when he spoke, was gentle but bore none the less a covert ring of triumph.

"Carden Layne," he said, "the most efficient investigating force on this planet has just reported to me through their chief. The subject of their investigation, as you have doubtless already guessed, was yourself. There is no record of your induction into an orphanage near Des Moines nor anywhere else. In short, there is no record of you at all until you appeared in a fight club in Milwaukee a little over a year ago and began to reveal close to superhuman ability in the ring; Carden Layne, you have no past on Earth."

"Perhaps," said Layne, hoping the sudden dryness in his throat would not reveal itself in his voice, "my past is one I do not wish to reveal."

"That," the scientist remarked dryly, "is very evident. But listen to this: less than two weeks before your initial appearance strange meteorological disturbances were reported in the isolated border lake district of Northern Minnesota. On successive nights the sky was lighted up by some strange object which was reported by hunters first to come down, then to vanish into space."

"Still very far-fetched, Doctor," said Layne, stirring uneasily. They had discovered entirely too much. Dr. Barnett rose from his desk and passed a blue veined trembling hand across the broad expanse of his forehead.

"There must be some reason, Carden Layne," he said, "for your denial of your birthright, for your refusal to tell us a truth whose results, for mankind and yourself, would be of value to make Columbus' report to his queen on his return from the first voyage to America look like small change." He gave his visitors a small courteous bow.

"If you will excuse me," he said, crossing the carpet, "I'm going to get pictures of Jane and Harman Layne and of the *Pilgrim*. Perhaps sight of them may stir memories that remain stubbornly quiescent."

He had gone and Layne was sitting there, his eyes flat, his fists clenched in his lap. Gail was looking at him. She said, "It's true, darling, isn't it? It's all true?"

NEXT ISSUE

STATION IN SPACE

A Fascinating and Thought-Provoking Special Feature

By WILLY LEY

CHAPTER III

Lethal Plans

AYNE looked at her wildly, then dropped his head on his hands. "I don't know," he said. "It may simply be a trick—a trap."

"Darling," she said, moving closer to him, "you're in some kind of a jam I don't understand. Why not talk to me—tell me about it?"

He lifted his head and regarded her angrily. He said, "How could you ever understand? How could anyone here on this strange planet?"

She shrank away from him then but he did not notice. Memory came flooding over him—memory and recollection that had nothing to do with Earth—memory of all but the last few months or years of his entire existence.

It had seemed normal in the incubator, there on Ptrek. He felt a sudden sense of strangeness at his effort to think of his unpronounceable home world in English letters. It was so—different, so very different. He had been confined from his earliest memories until the landing in the lake district on Earth, confined to the duralead screened area of what later became the ship.

They had explained it to him from the first. He was, they told him, a very special personage, bred for a very special purpose, the salvation of a planet and perhaps a universe. Selor, his teacher, and Odrana, who was his friend and had piloted the ship to Earth, had told him the story many times.

They were his people, of course, and they lived on the world that was home. It was a world of raging elements and constant change and of a very great science which had created him for his special purpose. It was a world in which only creatures of great science and incredible physical agility could survive.

He could not help but notice that he was different from them. Their round blue bodies and interchangeable limbs, which enabled them to perform incredible acrobatics, their single eyes and triangular mouth were incredibly inhuman. But then, he had not been brought up to consider himself as human.

"Our world," they had told him in the

curious sounds they called speech, "is in a state of dissolution. Its elements once were stable. Now they are becoming progressively less so. We have created you for our salvation."

He had, of course, believed them. Even within the confines of the ship he could sense the fury of the elements beyond its protective screens, the storms, the earthquakes, the volcanic eruptions. Often the great ship that was his home had trembled under the furious onslaught of some cosmic assault.

"We have discovered," Selor had told him when he was old enough to understand, "that there is a world where the elements work in reverse. Where they have progressed from volatile to stable. We have created you to exist freely on this world and to visit it. We have created this ship to take you there. From its vast supplies you must obtain a precious metal which we believe must be present on this world. It is an element its inhabitants call lead."

He had listened and, of course, believed, for they were his people, the only people he had known. They had taught him to read the books in the ship, had fed him the food that came from containers in its bunkers. They had taught him all they knew of Earth, which was, of course, only what the ship contained.

Thinking himself one of them, if a special mutation created for his purpose, he had imitated them, driven his growing body until, like them, he could walk on his hands almost as well as upon his feet, could indulge in most of the super acrobatics that were a necessity to their survival upon a world which was dissolving through a reversal of the radioactivity tables of Earth.

"You could not live long outside the screens," they told him. "Just as we ourselves would have trouble living on a stable globe." So he had accepted his confinement as a part of his existence, had trained himself for his task.

There had been voice tapes to which he had listened—and the voices were different. From them, with the aid of his tutors, he learned something of speech—thought he had been forced to unlearn much of it upon his arrival. He now knew, of course, that one of the voices had been that of a woman, the other of a man. And they called him Carden Layne. But this, his mentors taught him, was merely a creation of their own to adjust him

to the different conditions on Earth.

So he had grown, had waxed strong and amazingly agile in his roomy prison. And always the supplies had dwindled until, at the end, there had been barely enough to ensure his voyage and return. Odrana and he, with the blessing of Sclor, had blasted off on their vital mission, and never had any conditioned young fanatic been better briefed for his all important task.

THIE voyage had been long—but neither of them had cared. The ship, after all, was the only home Carden Layne had ever known and Odrana, like all of his species, cared little about time. Their tough blue bodies were ageless. They had landed in an isolated region of the continent of North America, where they had been ordered to descend according to the master plan of Sclor.

"You will scout this world briefly," the great creature had told them in their final briefing. "Then Sclor will take off and remain in space for one circuit of this precious planet around its star. You will assemble sufficient of their leaden metal to pack the holds of the ship. It will hold enough to suit our purposes. For with it we can build more ships and get more metal."

And so it had happened. Carden Layne had found himself alone upon an alien planet—alone and with a vital mission to perform. He had had a number of narrow squeaks getting adjusted. There had been the matter of clothes—he had been forced to rob a farmhouse to get suitable wear—and of money.

But his adjustment to his distant planet home and the physical prowess that was its result had enabled him to launch a ring career quickly. He had sufficient money now for his needs—he could promote enough as champion to pack the hold of the ship many times over. But by winning the title he had sacrificed the anonymity which was the essential core of his mission's success.

He looked again at Gail Atwater and his throat was suddenly too choked up for speech. She seemed to catch his need for she once again came close to him and this time her lips again found his and woke them to new sensation.

"I don't care where you come from," said the girl. "You're human to me."

They sprang apart as Dr. Barnett returned, bearing a tooled leather folder, which he laid down on his desk and opened. At

his bidding they approached the desk, though Layne felt as if he were approaching the headman's block. It was difficult to contemplate what the pictures might prove.

It was the ship that had been his home. There it stood, its glossy tapered snout pointing directly toward the heavens, its ports, its fins just as he had seen them for the first time when he left it nearly a year before. Again he could not speak—it was too shocking to have a lifetime stripped from him.

He saw then that Dr. Barnett was showing him pictures of a tall, dark haired young man, of a woman whose beauty lay in fine bone structure and level eyes and full-cut generous mouth rather than in what he had already come to know, as feminine artifice. He saw and he looked at a mirror on the wall and saw again. There could be no mistaking the similarity of those features.

Dr. Barnett read his expression correctly and said, "Now, perhaps, you'll tell us something of your story. I think both Miss Atwater and I have a right to know." He sat down again behind his desk and nodded for Carden Layne to refill the glasses. The young man did so and then he and the girl sank onto the sofa.

"One question before you begin," said Dr. Barnett after lifting his glass silently in greeting to the child of his two former colleagues. "Can you tell me anything of your parents' fate? Naturally, we—I have no record here."

"It's a little hard to realize all at once that I had human parents," said Layne with the suggestion of a smile. Then his expression grew thoughtful and he added, "I'm afraid, if they left the ship, the radioactivity killed them." He went on to explain about the reverse state of the elements on Ptrek. Dr. Barnett listened with glowing eyes, Gail Atwater with lips parted in astonishment.

"Of course," said the scientist, "in a world of unstable elements, lead would be as rare and important as radium in our world. Intriguing concept."

"But not for the inhabitants," Layne told him and went on to explain the restrictions such conditions had imposed upon the life forms. Dr. Barnett had him draw sketches of Sclor and Odrana and studied them with complete concentration.

"And you believed yourself to be one of them?" he asked Layne at last.

The younger man nodded. "What else could I believe?" He shrugged, then looked

at the girl. "I must confess that my experiences on Earth must have been undermining my subconscious. The discovery you have forced upon me tonight comes as a relief. You see, there was so much about us that they didn't know."

He spoke the truth. He was convinced now. The picture of the *Pilgrim*, surrounded by human technicians on its launching ground, had been the final clincher. At the moment, all he felt was relief. He could like this fine older man, he could even love this girl and not feel like a criminal.

"Of course you thought you were one of them," Dr. Barnett said slowly. He permitted himself a chuckle. "I once had a friend who had, for some reason, a number of dogs. Someone gave him a very young pullet. By the time it was grown, that bird was convinced it, too, was a dog. It played with what it believed to be its own kind, hunted with them and even tried to bark like them."

"It was all the bird knew," said Layne. "Just as they were all I knew."

"Of course," said the scientist, "this remarkable bringing up of yours is the secret behind your success in the ring. Any species which has survived on a planet under such conditions must have amazing stamina and agility."

"They do," said Layne and suddenly he was frightened. His mission, which had seemed until now a noble thing, was horrible. For he was no longer one of them. Human beings, this Earth, were no longer alien. He shoved his fear resolutely to the back of his mind as Dr. Barnett asked him to demonstrate some of the alien tricks he had mastered in the course of his strange boyhood.

LAYNE took off his coat, stood briefly in the middle of the carpet. Then, with a series of flips and twists too fast for the eye to follow, he somersaulted in the air from a standing start, got momentum on two end over end flips, took off upside down high against the wall, spun to land on his feet from the exact spot and direction which he had started in.

"It's incredible," said the older man. Layne got back into his coat and answered more questions. He explained how he had acquired his earthly education from the books aboard the *Pilgrim*, went on to detail the gaps in his training.

"Naturally," said Dr. Barnett, nodding.

"A couple like your parents, en route to the stars, would have collected only the scientific texts they considered might be vitally needed. I know—I helped them select their library. I must say, Carden, from what you have told me, that they would be proud of you if they could see you. You have solved incredible problems in highly brilliant fashion."

He smiled, added, "Your vocabulary was one of the first things that gave me assurance my mad hope was right. No prize fighter, not even the famous Gene Tunney, ever talked as you do." His smile faded. "And now," he said, "I should like to know more of your mission to Earth. Surely it must be vital—to them."

It was the request he had been dreading—for no matter how great his joy at finding himself human, the conditioning of a lifetime was not easy to break. He thought of Selor and Odrana and all the others, hopelessly imprisoned on their unstable world, thought of all the lead and other stable elements on Earth . . .

They had tricked him, virtually imprisoned him, perhaps destroyed his parents, yes. But in doing so were not they obeying the oldest law of all nature—the law of self preservation? He saw Dr. Barnett regarding him gravely, looked at Gail and answered her intimate smile—and knew that there could be but one reply. He cleared his throat and sat up to make his statement.

"Though I am hardly in a position to know the innermost plans of my—my friends," he said, "I feel fairly certain that, if I succeed in fulfilling my mission it will mean widespread destruction, possibly the end of mankind on this planet." He paused as Gail exclaimed in horror, then nodded and went on:

"You see, Dr. Barnett, if I load the *Pilgrim* and it gets back to Ptrek, they will use its cargo to manufacture other ships—and some of the elements they will use will almost certainly be ruinously radioactive to Earth. I imagine a Geiger count check of our landing place would reveal a high radiation. If I hadn't moved away from it quickly I should not be alive today."

"It has already been tested," said Dr. Barnett quietly. "Surely, young Layne, you do not think us utter fools." He paused in thought, added, "It's quite a problem. You say your friend Odrana is coming back for you."

"In less than ten days I must meet him," said Layne quietly. "If I don't—well, he is

to embark upon a tour of destruction around the world. He has been mapping it during this year, and the ship is armed with some deadly weapons."

"Well, in that case we must make him happy," said Dr. Barnett. "I presume they have some means of tracing the *Pilgrim* from their universe through to this one, young Layne?"

"I believe so," said Layne, nodding. "They have developed something like your radar to amazing lengths. They talked to us—from Ptrek—on a video globe to the rim of their universe. And they have a tracer ray which follows the ship into this one."

"How I'd like to have you work that one out for me," said the scientist with a sigh. "In the meantime, however, we have a more vital problem to answer. And we have only ten days in which to do it. May I bid you good night?"

He left them there and Layne, who had risen, became aware of Gail standing beside him. Without a word he took her into his arms. For the first time since his arrival on Earth he was able to give—himself.

CHAPTER IV

Last Toast

THE world wondered the next day—wondered and speculated as to what had happened to Carden Layne, the strangely articulate and generously gifted young man who had knocked out the Frenchman to win the Middleweight title. It was a disappearance impossible to cover up, what with all the swarms of reporters, photographers, promoters, fans and hangers-on who sought to see him.

Layne and Gail, still at Dr. Barnett's home, read the story with amusement. It was the same story, with only the embellishments varied, in all the New York papers. They were in an upstairs living room of the great house in New Jersey, awaiting the arrival of the justice of the peace who was to marry them.

"It's supposed to be bad luck for the bride to see the groom before the ceremony," said Gail, her eyes laughing and her nose wrinkling delightfully. Layne kissed her ardently, then held her off and looked at her seriously.

"Are you sure you want to go through with this?" he asked her.

"Do we have to go through with it *again*?" she countered. "If the world is going to end in nine days or so I want them to be happy ones. If it isn't—if anything should happen to you—I want to have known happiness with you. Okay?"

"Very much so," he told her gently. He had no doubt as to what he was now. He was entirely human and at the moment it was a glorious feeling. They were still sitting quietly close together, saying nothing, when the gold frogged butler knocked and entered to tell them that the justice of the peace was waiting.

The ceremony was brief and simple. Packy Gillis, Layne's manager, had been smuggled out of town to serve as best man. Dr. Barnett, looking like one of the man of distinction whisky advertisements of post World War Two days on Earth, gave the bride away. It was, Layne discovered, practically painless.

"I dunno what it's all about," Gillis told his fighter from nowhere when it was over and the toasts were drunk, "but I gotta wish you luck. Gail's a good kid—good as they come—and you—well, boy, you won me my first title."

"I'm afraid I won't be fighting again, no matter what," Layne told him, putting an arm across the smaller man's shoulders. "But it can't be helped."

"Yeah, it's way out of hand now," said the manager sadly. He glanced at Dr. Barnett and shook his head. "Some day maybe you'll tell me the score, huh?"

"Some day," said Layne, "if I can, Packy. It's rather a long story."

"Ain't it just my luck?" murmured Packy rhetorically. "I bang around in this business for years trying to collect winning purses for a bunch of bums. And then, when I get an out-of-this-world fighter, I lose him to this." His glance was comprehensive and included everything and everybody in the large room.

Shortly afterward he was gone. There, was of course, no honeymoon for the newly-weds. There wasn't time. They were simply staying on with Dr. Barnett while Layne was subjected to exhaustive interviews by that distinguished handful of men and women who make up the roster of the greatest scientists on Earth.

Each in his own field wished to know all there was to know about Ptrek and its

STARTLING STORIES

strange conditions and inhabitants. Though his existence there had been limited to the shelter of the *Pilgrim*, Layne found, under interrogation, that he knew more than he had suspected. For Scor and Odrana had of course told him a great many things in the course of some twenty years which he had almost forgotten.

It was not easy for any of them—Layne, Gail, Dr. Barnett, the other scientists. But Layne and his bride at least had their nights undisturbed—which would hardly have been the case had they stayed in Manhattan or gone to one of the well publicized resort hotels which had been seeking them as guests.

Occasionally he awoke in the night to find Gail weeping softly by his side. And he wished bitterly that there were some other way out of the dilemma. For when Odrana brought the *Pilgrim* back to Earth for a second time it was he, Layne, who would have to meet him. There was no other choice.

The main issue—the saving of the world from the destruction of Odrana—went on quietly but apace. Officials, important and small fry, came and went in a steady stream, telephone and radio lines were kept busy, a private video was installed with its own secret network channel. Over it Layne talked to the President, who regretted his inability to visit him at Dr. Barnett's estate.

"Perhaps, when this is over—if all goes well—I shall have the opportunity to greet you in person, Layne," he said. And Layne, who had become sufficiently American to appreciate the honor, murmured his thanks.

Then, exactly a week after his abduction by the Government men from a dressing room under Madison Square Garden, Layne bade Gail farewell and, for the first time in his life, he knew true emotional grief. Had the urgency of the forthcoming role not been so great he'd have been tempted to let the world go and stay to meet whatever fate had in store with Gail at his side.

"You're coming back, darling?" she asked him softly. Standing in the doorway of their bedroom, he could only shrug and shake his head.

"I don't know, honey," he said. "I'll do my best. It's my life too."

SHESHE had cried then, and he had left her, for of course he knew that there wasn't a chance of his returning. In only one way could the invasion from Ptrek be prevented—by convincing Odrana and Scor and the

others that Earth and its System were too radioactive themselves to be worth raiding. And to make this convincing it meant the sacrifice of a man's life. The only man could be himself.

Dr. Barnett said little during the flight to Minnesota. It was night and the stars were mirrored in the lights of the towns and cities that passed quickly some twenty miles beneath the supersonic progress of their rocket plane. It was a government ship, a special ship in whose design the scientist himself had had a major hand. It made the flight from a North Jersey airport to Duluth in just over half an hour—if changes in time were not taken to make it a minus in time. But to Layne, who had traveled the starways, it was a humdrum journey.

From Duluth they took off in a swift and smaller helicopter for the lake near where the rendezvous with Odrana was set. Layne was only moderately surprised to discover that they had the exact location already marked. Even after a year and at night the glittery desolation caused by the atomic jets of the *Pilgrim* were plainly evident. It shone like glass in the light of the moon.

They examined the setup. Great piles of lead had been stacked close to the area and were guarded by Government operatives and a detachment of troops in full battle dress and equipment. Someone produced a Geiger counter and its ominous ticking rose to near machine-gun intensity as it was brought near the lead.

"Good—good!" said Dr. Barnett heartily and Layne turned away, wondering a little at the heartiness of the man under the circumstance. He had a sudden pang of doubt as to how the parents he had never known had come to be sent to their fate while Barnett continued to amass wealth and honors on Earth.

But then the scientist was taking him by the arm and leading him back to the helicopter, saying, "By tomorrow night the men will be withdrawn to form a circular cordon around the area at a distance of two miles. It's a good thing the district is so isolated. We'd have trouble in a more populated area."

"So," said Layne quietly, "would Odrana. No one on this world is quite prepared for anything like him. There are—differences."

"I want to know more about them," said Dr. Barnett. "Let's go back to Duluth and the apartment the Government has arranged for us. You can tell me more about them

while we are waiting for your friend to make his reappearance."

They ate and tried to sleep and waited and talked—and all the while the hour of doom drew inexorably closer. Dr. Barnett asked innumerable questions, his curiosity about the aliens insatiable. Layne, though he wanted only to be left alone with silence, since seeing Gail again was out of the question, knew it was his duty to answer them and did his best to conceal his irritability.

Finally it was time. The scientist gave Layne a squeeze of the shoulder and opened a case that had been reposing, its clasp untouched, upon the secretary. It proved to contain a pair of small cut glass bottles filled with a rare looking amber fluid. The scientist procured glasses from the bathroom.

"A farewell toast," he said. "This is something few on Earth today have ever tasted. It is a brandy laid down by my great grandfather himself. One of the vials for you, one for me. I'd have brought more—but it's all there is."

Layne felt touched. In a matter of minutes he would be on his way to the meeting place again in the helicopter. And this time he would not be coming back. For, when the *Pilgrim* reached the rim of the universe and came within range of the alien video globe, it would be his duty to fissionize the atomic explosives concealed in the lead. Only thus could possible invasion be halted.

"Your health," said Dr. Barnett and there was an odd gleam in his eye. Layne nodded, unable to speak, and drank the entire glassful. In a matter of seconds he found himself sitting on the floor, only prevented from lying helpless upon his back by the fact that a chair was directly behind him.

Dr. Barnett, moving swiftly, glanced at him and nodded. "Don't worry, young Layne," he said. "I may have failed your parents but I'm not failing you. I've had my life here—a long and full one. Yours still lies ahead—and as the first space born Earthman, you are far less expendable than I."

Layne sought to ask a question but his vocal cords, like the rest of his body, were paralyzed. The scientist, who was busily working on his hair with something from a bottle, caught his effort in the mirror before him and spoke again without turning his head.

"It will wear off in three hours," he said. "It is something new—a more efficient type of anesthesia. We have finally eliminated the

need for the needle." He worked on while Layne, whose mind at least was active, sought to understand the full implications of what was happening.

DR. BARNETT pulled what looked like a thin sheet of rubber over his face and turned—and Layne would have gasped had he been able to. For he was staring at a replica of himself. The scientist looked again at the mirror, then busied himself with donning Layne's overcoat and hat, which were on a chair near the door.

He moved toward the exit, turned to wave a final salute.

"Just a little thing," he said with a faint smile, "that I thought up myself. As for you, don't worry. Someone will be coming for you soon."

He closed the door quietly behind him. Layne lay there, helpless, trying to visualize what was happening from moment to moment. The magnitude of the older man's sacrifice impressed him more and more deeply. It was something that could not even have been understood by those who had brought him up on the distant world of Ptrek in that strange universe where elements moved backward.

Somehow he was proud of himself for belonging to a race capable of such a sacrifice, for being able, in one short year, to understand it. He heard a faint roar from the distance and then he knew suspense. For if the second roar did not come at the proper interval it would mean Dr. Barnett had failed.

Though he could not move, sweat poured from him, drenching his body. He could see in his mind's eye the opening of the port, the emergence of the great crane to pick up the deadly cargo, the entry of the scientist into the *Pilgrim*. He hoped only that his mind's eye was not deceiving him.

He wondered if he shouldn't feel outrage at having his own role subordinated. But then he thought of Gail and could not resent Dr. Barnett's action. Life—a life such as he had never dreamed of ten days before, lay ahead of him. But only if the elderly scientist were successful in his masquerade.

Then, after interminable time, the second roar sounded—less a roar this time than the tremor of a distant quake. The *Pilgrim* had taken off. If destruction were to follow it would come almost at once. He waited, still sweating. But once the floor stopped shaking there was only silence.

He was barely beginning to regain some control of his muscles when the door to the apartment was flung open and Gail rushed in and was cuddling him to her and asking him what had happened. Layne grinned, found his lips could move at last and managed to mutter:

"He went for me. He doped my last drink."

He had no need to explain whom he meant....

On the volatile planet of Ptrek, where Sclor and others were anxiously awaiting the return of the treasure ship that had come to them so mysteriously and unexpectedly some circuits before, a round blue bodied scientist kept his single eye glued to an odd

combination of mirror lenses adjusted to the refractive capacity of his own unearthly eyesight.

Beside him glowed a video globe.

"It comes!" he rasped suddenly in the strange dialect that was language to him. "The Earth-ship comes. Our salvation has crossed the rim of the universe." He turned to broadcast the great news to his fellows.

Then, as his triangular mouth opened to give the news to the transmitter by the video globe, he uttered a low whistling sound that was, to him and his kind, a scream of horror.

For in the globe the cigar shape of the ship had suddenly vanished in a brilliant burst of light that was more than his single eye could bear.



HEADLINERS IN THE NEXT ISSUE

FIRE IN THE HEAVENS

An Astonishing Complete Novel of Mankind's Struggle Against the Growing Instability of the Sun!

By GEORGE O. SMITH

HOLLYWOOD ON THE MOON

A Hall of Fame Novelet Featuring the Debut of Anthony Quade of Nine Planets Films

By HENRY KUTTNER

STATION IN SPACE

A Forward-Looking Special Feature

By WILLY LEY



"These pictures apparently form a record of life as it was at the height of their civilization," said the Historian

History Lesson

By ARTHUR C. CLARKE

NO ONE could remember when the tribe had begun its long journey. The land of great rolling plains that had been its first home was now no more than a half-forgotten dream.

For many years Shann and his people had been fleeing through a country of low hills and sparkling lakes, and now the mountains lay ahead. This summer they must cross them to the southern lands. There was little time to lose. The white terror that had come

down from the Poles, grinding continents to dust and freezing the very air before it, was less than a day's march behind.

Shann wondered if the glaciers could climb the mountains ahead, and within his heart he dared to kindle a little flame of hope. This might prove a barrier against which even the remorseless ice would batter in vain. In the southern lands of which the legends spoke, his people might find refuge at last.

It took weeks to discover a pass through

SHANN AND HIS PEOPLE FIGHT THE WHITE TERROR!

which the tribe and the animals could travel. When midsummer came, they had camped in a lonely valley where the air was thin and the stars shone with a brilliance on one had ever seen before.

The summer was waning when Shann took his two sons and went ahead to explore the way. For three days they climbed, and for three nights slept as best they could on the freezing rocks. And on the fourth morning there was nothing ahead but a gentle rise to a cairn of gray stones built by other travelers, centuries ago.

Shann felt himself trembling, and not with cold, as they walked toward the little pyramid of stones. His sons had fallen behind. No one spoke, for too much was at stake. In a little while they would know if all their hopes had been betrayed.

To east and west, the wall of mountains curved away as if embracing the land beneath. Below lay endless miles of undulating plain, with a great river swinging across it in tremendous loops. It was a fertile land; one in which the tribe could raise crops knowing that there would be no need to flee before the harvest came.

Then Shann lifted his eyes to the south, and saw the doom of all his hopes. For there at the edge of the world glimmered that deadly light he had seen so often to the north—the glint of ice below the horizon.

There was no way forward. Through all the years of flight, the glaciers from the south had been advancing to meet them. Soon they would be crushed beneath the moving walls of ice. . . .

SOUTHERN glaciers did not reach the mountains until a generation later. In that last summer the sons of Shann carried the sacred treasures of the tribe to the lonely cairn overlooking the plain. The ice that had once gleamed below the horizon was now almost at their feet. By spring it would be splintering against the mountain walls.

No one understood the treasures now. They were from a past too distant for the understanding of any man alive. Their origins were lost in the mists that surrounded the Golden Age, and how they had come at last into the possession of this wandering tribe was a story that now would never be told. For it was the story of a civilization that had passed beyond recall.

Once, all these pitiful relics had been

treasured for some good reason, and now they had become sacred though their meaning had long been lost. The print in the old books had faded centuries ago though much of the lettering was still visible—if there had been any to read it. But many generations had passed since anyone had had a use for a set of seven-figure logarithms, an atlas of the world, and the score of Sibelius' Seventh Symphony, printed, according to the flyleaf, by H. K. Chu and Sons, at the City of Pekin in the year 2371 A.D.

The old books were placed reverently in the little crypt that had been made to receive them. There followed a motley collection of fragments—gold and platinum coins, a broken telephoto lens, a watch, a cold-light lamp, a microphone, the cutter from an electric shaver, some midget radio tubes, the flotsam that had been left behind when the great tide of civilization had ebbed forever.

All these treasures were carefully stowed away in their resting place. Then came three more relics, the most sacred of all because the least understood.

The first was a strangely shaped piece of metal, showing the coloration of intense heat. It was, in its way, the most pathetic of all these symbols from the past, for it told of man's greatest achievement and of the future he might have known. The mahogany stand on which it was mounted bore a silver plate with the inscription.

Auxiliary Igniter from Starboard Jet
Spaceship "Morning Star"
Earth-Moon, A.D. 1985

Next followed another miracle of the ancient science—a sphere of transparent plastic with strangely shaped pieces of metal embedded in it. At its centre was a tiny capsule of synthetic radio-element, surrounded by the converting screens that shifted its radiation far down the spectrum. As long as the material remained active, the sphere would be a tiny radio transmitter, broadcasting power in all directions. Only a few of these spheres had ever been made. They had been designed as perpetual beacons to mark the orbits of the asteroids. But man had never reached the asteroids and the beacons had never been used.

Last of all was a flat, circular tin, wide in comparison with its depth. It was heavily sealed, and rattled when shaken. The tribal lore predicted that disaster would follow if

it were ever opened, and no one knew that it held one of the great works of art of nearly a thousand years before.

The work was finished. The two men rolled the stones back into place and slowly began to descend the mountainside. Even to the last, man had given some thought to the future and had tried to preserve something for posterity.

That winter the great waves of ice began their first assault on the mountains, attacking from north and south. The foothills were overwhelmed in the first onslaught, and the glaciers ground them into dust. But the mountains stood firm, and when the summer came the ice retreated for a while.

So, winter after winter, the battle continued, and the roar of the avalanches, the grinding of rock and the explosions of splintering ice filled the air with tumult. No war of man's had been fiercer than this, and even man's battles had not quite engulfed the globe as this had done.

At last the tidal waves of ice began to subside and to creep slowly down the flanks of the mountains they had never quite subdued. The valleys and passes were still firmly in their grip. It was stalemate. The glaciers had met their match, but their defeat was too late to be of any use to Man.

So the centuries passed, and presently there happened something that must occur once at least in the history of every world in the universe, no matter how remote and lonely it may be.

THE ship from Venus came five thousand years too late, but its crew knew nothing of this. While still many millions of miles away, the telescopes had seen the great shroud of ice that made Earth the most brilliant object in the sky next to the sun itself.

Here and there the dazzling sheet was marred by black specks that revealed the presence of almost buried mountains. That was all. The rolling oceans, the plains and forests, the deserts and lakes—all that had been the world of man was sealed beneath the ice, perhaps forever.

The ship closed in to Earth and established an orbit less than a thousand miles away. For five days it circled the planet, while cameras recorded all that was left to see and a hundred instruments gathered information that would give the Venusian scientists many

years of work.

An actual landing was not intended. There seemed little purpose in it. But on the sixth day the picture changed. A panoramic monitor, driven to the limit of its amplification, detected the dying radiation of the five-thousand-year-old beacon. Through all the centuries, it had been sending out its signals with ever-failing strength as its radioactive heart steadily weakened.

The monitor locked on the beacon frequency. In the control room, a bell clamored for attention. A little later, the Venusian ship broke free from its orbit and slanted down toward Earth, toward a range of mountains that still towered proudly above the ice, and to a cairn of gray stones that the years had scarcely touched. . . .

The great disc of the sun blazed fiercely in a sky no longer veiled with mist, for the clouds that had once hidden Venus had now completely gone. Whatever force had caused the change in the sun's radiation had doomed one civilization, but had given birth to another. Less than five thousand years before, the half-savage people of Venus had seen Sun and stars for the first time. Just as the science of Earth had begun with astronomy, so had that of Venus, and on the warm, rich world that man had never seen progress had been incredibly rapid.

Perhaps the Venusians had been lucky. They never knew the Dark Age that held Man enchain'd for a thousand years. They missed the long detour into chemistry and mechanics but came at once to the more fundamental laws of radiation physics. In the time that man had taken to progress from the Pyramids to the rocket-propelled spaceship, the Venusians had passed from the discovery of agriculture to anti-gravity itself—the ultimate secret that Man had never learned.

The warm ocean that still bore most of the young planet's life rolled its breakers languidly against the sandy shore. So new was this continent that the very sands were coarse and gritty. There had not yet been time enough for the sea to wear them smooth.

The scientists lay half in the water, their beautiful reptilian bodies gleaming in the sunlight. The greatest minds of Venus had gathered on this shore from all the islands of the planet. What they were going to hear they did not yet know, except that it concerned the Third World and the mysterious

race that had peopled it before the coming of the ice.

The Historian was standing on the land, for the instruments he wished to use had no love of water. By his side was a large machine which attracted many curious glances from his colleagues. It was clearly concerned with optics, for a lens system projected from it toward a screen of white material a dozen yards away.

The Historian began to speak. Briefly he recapitulated what little had been discovered concerning the third planet and its people.

HE MENTIONED the centuries of fruitless research that had failed to interpret a single word of the writings of Earth. The planet had been inhabited by a race of great technical ability. That, at least, was proved by the few pieces of machinery that had been found in the cairn upon the mountain.

"We do not know why so advanced a civilization came to an end," he observed. "Almost certainly, it had sufficient knowledge to survive an Ice Age. There must have been some other factor of which we know nothing. Possibly disease or racial degeneration may have been responsible. It has even been suggested that the tribal conflicts endemic to our own species in prehistoric times may have continued on the third planet after the coming of technology.

"Some philosophers maintain that knowledge of machinery does not necessarily imply a high degree of civilization, and it is theoretically possible to have wars in a society possessing mechanical power, flight, and even radio. Such a conception is alien to our thoughts, but we must admit its possibility. It would certainly account for the downfall of the lost race.

"It has always been assumed that we should never know anything of the physical form of the creatures who lived on Planet Three. For centuries our artists have been depicting scenes from the history of the dead world, peopling it with all manner of fantastic beings. Most of these creations have resembled us more or less closely, though it has often been pointed out that because we are reptiles it does not follow that all intelligent life must necessarily be reptilian.

"We now know the answer to one of the most baffling problems of history. At last, after hundred years of research, we have dis-

covered the exact form and nature of the ruling life on the Third Planet."

There was a murmur of astonishment from the assembled scientists. Some were so taken aback that they disappeared for a while into the comfort of the ocean, as all Venusians were apt to do in moments of stress. The Historian waited until his colleagues re-emerged into the element they so disliked. He himself was quite comfortable, thanks to the tiny sprays that were continually playing over his body. With their help he could live on land for many hours before having to return to the ocean.

The excitement slowly subsided and the lecturer continued:

"One of the most puzzling of the objects found on Planet Three was a flat metal container holding a great length of transparent plastic material, perforated at the edges and wound tightly into a spool. This transparent tape at first seemed quite featureless, but an examination with the new subelectronic microscope has shown that this is not the case. Along the surface of the material, invisible to our eyes but perfectly clear under the correct radiation, are literally thousands of tiny pictures. It is believed that they were imprinted on the material by some chemical means, and have faded with the passage of time.

"These pictures apparently form a record of life as it was on the Third Planet at the height of its civilization. They are not independent. Consecutive pictures are almost identical, differing only in the detail of movement. The purpose of such a record is obvious. It is only necessary to project the scenes in rapid succession to give an illusion of continuous movement. We have made a machine to do this, and I have here an exact reproduction of the picture sequence.

"The scenes you are now going to witness take us back many thousands of years, to the great days of our sister planet. They show a complex civilization, many of whose activities we can only dimly understand. Life seems to have been very violent and energetic, and much that you will see is quite baffling.

"It is clear that the Third Planet was inhabited by a number of different species, none of them reptilian. That is a blow to our pride, but the conclusion is inescapable. The dominant type of life appears to have been a two-armed biped. It walked upright and

covered its body with some flexible material, possibly for protection against the cold, since even before the Ice Age the planet was at a much lower temperature than our own world. But I will not try your patience any further. You will now see the record of which I have been speaking."

A BRILLIANT light flashed from the projector. There was a gentle whirring, and on the screen appeared hundreds of strange beings moving rather jerkily to and fro. The picture expanded to embrace one of the creatures, and the scientists could see that the Historian's description had been correct.

The creature possessed two eyes, set rather close together, but the other facial adornments were a little obscure. There was a large orifice in the lower portion of the head that was continually opening and closing. Possibly it had something to do with the creature's breathing.

The scientists watched spellbound as the strange being became involved in a series of fantastic adventures. There was an incredibly violent conflict with another, slightly different creature. It seemed certain that they must both be killed, but when it was all over neither seemed any the worse.

Then came a furious drive over miles of country in a four-wheeled mechanical device which was capable of extraordinary feats of locomotion. The ride ended in a city packed with other vehicles moving in all directions at breath-taking speeds. No one was surprised to see two of the machines meet head-on with devastating results.

After that, events became even more complicated. It was now quite obvious that it would take many years of research to analyze and understand all that was happening. It was also clear that the record was a work of art, somewhat stylized, rather than an exact reproduction of life as it actually had been on the Third Planet.

Most of the scientists felt themselves completely dazed when the sequence of pictures came to an end. There was a final flurry of motion, in which the creature that had been the center of interest became involved in some tremendous but incomprehensible catastrophe. The picture contracted to a circle, centered on the creature's head.

The last scene of all was an expanded view of its face, obviously expressing some power-

ful emotion. But whether it was rage, grief, defiance, resignation or some other feeling could not be guessed. The picture vanished. For a moment some lettering appeared on the screen, then it was all over.

For several minutes there was complete silence, save for the lapping of the waves upon the sand. The scientists were too stunned to speak. The fleeting glimpse of Earth's civilization had had a shattering effect on their minds. Then little groups began to start talking together, first in whispers and then more and more loudly as the implications of what they had seen became clearer. Presently the Historian called for attention and addressed the meeting again.

"We are now planning," he said, "a vast program of research to extract all available knowledge from this record. Thousands of copies are being made for distribution to all workers. You will appreciate the problems involved. The psychologists in particular have an immense task confronting them.

"But I do not doubt that we shall succeed. In another generation, who can say what we may not have learned of this wonderful race? Before we leave, let us look again at our remote cousins, whose wisdom may have surpassed our own but of whom so little has survived."

Once more the final picture flashed on the screen, motionless this time, for the projector had been stopped. With something like awe, the scientists gazed at the still figure from the past, while in turn the little biped stared back at them with its characteristic expression of arrogant bad temper.

For the rest of time it would symbolize the human race. The psychologists of Venus would analyze its actions and watch its every movement until they could reconstruct its mind. Thousands of books would be written about it. Intricate philosophies would be contrived to account for its behavior.

But all this labor, all this research, would be utterly in vain. Perhaps the proud and lonely figure on the screen was smiling sardonically at the scientists who were starting on their age-long fruitless quest.

Its secret would be safe as long as the universe endured, for no one now would ever read the lost language of Earth. Millions of times in the ages to come those last few words would flash across the screen, and none could ever guess their meaning:

A Walt Disney Production.

THE ETHER VIBRATES

(Continued from page 7)

solute truth without in the least realizing that he was telling a most monstrous lie. Absolute truth can emanate only from those who categorically refute the limitations of their own experience and the experience of others in the judgment of intangibles of science and philosophy.

Unfortunately it is highly improbable that such a person has ever existed.

OUR NEXT ISSUE

GEORGE O. SMITH takes over the novelist's spot in the July issue with his first major opus for STARTLING STORIES since his memorable ONE OF THREE in the March, 1948, issue.

This time, in FIRE IN THE HEAVENS, Mr. Smith deals with a brilliant young scientist named Jeff Benson, who supports himself by making precision laboratory instruments even more precise while spending every available extra moment investigating what he believes to be a flaw in the law of conservation of energy.

While attending an auction of scientific equipment he runs afoul of Lucille Roman, perhaps the most beautiful, probably the richest and almost certainly the most arrogant young lady ever to appear on the American scene. The very innocence of his motives causes Miss Benson to regard him distrustfully and when she learns how highly Jeff is held in esteem by the scientific fraternity, her distrust ripens into open enmity.

For la Roman, no scientist herself, has learned at an early age to let her money and her cynically shrewd executive abilities cause the ablest scientists she can purchase to do her profitable bidding. And one of her most important projects involves a Dr. Humphrey, who has managed to tap energy from some apparently inexhaustible and mysterious source.

Her object, of course, is pioneer space travel with its vast rewards in power and riches, and she seems well along the road to success when Jeff and a promoter as ruthless as herself, Charles Horne, stumble across her path. For Jeff has little by little developed a theory as to the source of Dr. Humphrey's mysterious power and Horne is out to get Lucille Roman at any and all costs.

The two-way duel, with Jeff caught

squarely in the middle, is well under way when another factor enters the struggle, making all human efforts look the puny things they are, reshuffling all values and forcing all entries to reveal themselves for what they are.

This factor is a growing instability in the sun itself.

For the rest—well, you'll have to read it yourselves. Suffice it to say that Mr. Smith is at his most adroit and swift-paced best in building FIRE IN THE HEAVENS toward one of the most monumental climaxes in science fiction history.

The Hall of Fame Classic—and this should call for cheerers—is no less an epic in science fiction history than Henry Kuttner's famed HOLLYWOOD ON THE MOON, precursor of one of the most famous series ever run in the field. It is the story in which troubleshooter Anthony Quade of mammoth Nine Planets Films made his debut under the irascible aegis of Von Zorn, the greatest interplanetary producer of all time.

Tony Quade's problems commence with an ether eddy which threatens to destroy a planetoid already rented for location purposes by Nine Planets and this is probably the least of the troubles he is called upon to shoot. HOLLYWOOD ON THE MOON is a classic which made its mark more than a dozen years ago—and it is one which is fondly remembered by most of those who read it then.

There will be a full quota of short stories and features on hand as well, come July—written by the ablest and most intriguing science fiction talent your editor can assemble. Look for another all-planet line-up. You won't be disappointed.

ETHERGRAMS

From this point of view the mailsack seems packed with good letters as well as just letters (thanks to all of you who wrote, regardless)—but only the reading will bear out this impression, so let's go. By way of an opener—

SHORTY by JIM GOLDFRANK

Dear Editor: I was one of the guys who picked Dewey to win the election. This issue (January) was

about the worst you've ever had (Like heck!)—1118 Fulton Street, Woodmere, Long Island.

A bit cryptic but complimentary in a reverse-English sort of way. So thanks—and that should take care of the election joke thing for this trip.

MORE WELL-DIGGING

by Earl N. Simon

Dear Editor: The editorial contained in the January, 1948, issue prompts this letter. In it you discuss theories, their plausibility and their continued existence as accepted theories. Your discussion of it brings to mind a philosophical discussion on the variability of truth.

It began, as all good theories should, with a statement which could not be denied. All that is true cannot be denied, but truths which are an accumulation of truths can be. In that opening statement is contained why accepted theories do not remain in acceptance.

Theories are but an accumulation of truths so arranged as to explain certain other truths, that they do not continue to do so satisfactorily, is because other truths are found which better explain.

Theories are truths, since they are truths accumulated and so stated in a sequence to explain something.

To carry this discussion further would entail my going deeply into my favorite topic, namely variable truths, for which I do not have the time. I would rather take this space to back Mr. (I hope it is Mr.) McAdams' ideas for stories with abstract mathematical background. There is an exceptionally large area here. No comments on the stories except to say, the mag. is continually improving. That is the way I like to see it. Keep up the good work.

One more story possibility—there is an extra large almost completely ignored area in the materials and material testing field. Don't know why but I can only remember one story ever written that could be placed in this category.—2821 So. Lake Shore Blvd., Euclid (23) Ohio.

Somewhere in the opening paragraphs of your letter, Mr. Simon, we seem to detect a syllogism. We'll leave it up to the readers to dig it out. Your references to the McAdams letter in the January issue and the conclusions you draw from same are interesting.

However, there is one point stressed both by you and Mr. McAdams which seems to us a mighty tricky problem. He brings up the unexplored field of non-metric mathematics as a stamping ground for sf authors. And you come up with material-materials testing for ditto purposes.

This causes us to revert to an editorial axiom which must remain inviolate whilst we occupy this particular chair—namely, that authors must be authors first and anything else second if they are to contribute to our pages. As only a handful of them are scientists of any pretensions or ability, we question whether the suggestion will cause any upheavals in creative sf writing.

Of course, if any of you scientists can put a story together in professional form. . . .

NEW(?) TRAILS

by George Ebey

Dear Editor: The best thing about STARTLING and

TWS is the willingness of the editor (editors?) to experiment, to strike off for new trails. The most important thing about this policy is an implied understanding of the dynamic quality of science fiction. Nobody else in the field seems to have considered this. Strangely enough, only these two magazines seem concerned with what I should call philosophical science fiction, which is to say—the reactions of human beings to scientific progress, to new concepts of the world, to sociological and technological change.

This is a kind of science fiction far removed from the bang-bang-and-another-Martian-bit-the-dust and the pure-&-simple gadget story which used to dominate the field—at once more realistic than the former and with more interest to the majority of readers than the latter. This kind of science fiction is oriented towards the needs of the reader.

Of course a group of authors is not educated to a new concept right away. It is evident that they are still groping. The quality of the January issue of STARTLING STORIES is uneven—and extremely exciting. The Town Aris held my interest all the way through but it was a little too abstract for enjoyment. The world-saving theme was understood; the writing was excellent; most of the way Kuttner seemed to be playing with ideas which, I concede, were worth developing.

The story Flies was a step in the right direction. Unfortunately the author was still dominated by the old idea of throwing in some scientific theory to make fiction science fiction. The important thing in this story was not that the girl's husband had died because of a shrinking universe but that he had died in a brave human adventure. Mr. MacDonald stressed the former and the effect of the story was diminished.

My favorite story deserves a new paragraph. Rene LaFayette's Forbidden Voyage was a juicy bit. And it was relevant to reality too because it pointed out something which is very true, especially today: the problems of technical progress are secondary to the problems of human understanding. George Cartyle got to the moon, all right, but since nobody in authority really believed him the effort was wasted. Looking at the situation another way, he never got to the moon at all. Neat.

It should be clear to the fans that the cover paintings are meant to be teasers; the bright wrapper on the package so to speak. The illustrations develop the ideas. Personally I have always stood with Raphael Sanzio (or was it Michelangelo Buonarroti?) who declared: "Gents, when you seen one nude you seen 'em all!" However I do like the lady on page 89 who has a very wistful face.

I have always believed that a quantity of letters of quality indicates a healthy magazine. The January Ether Vibrates is proof positive. I am suspicious, however, of that letter by H. T. McAdams about basing sf on mathematics. Tongue in cheekish. Looks like a satirical answer to your demand for "Ideas" in the letters.

In re the fanzine review section—don't take the fans' injured feelings too seriously when your criticisms are misinterpreted. Most fans are emotionally immature and require a tolerant treatment. As for fan poetry . . . the nicest thing to be said is that the people who write it mean well—and deserve to be toasted over a slow fire.—4766 Reinhardt Drive, Oakland 19, California.

You'll probably take a bit of toasting yourself, George, for that last crack. Seriously, it's good to have someone appreciative of our efforts to present the problems of science fiction and fantasy through the reactions of the humans engaged in attempting to solve them.

But while querying the McAdams letter, you might remember another portion (non-mathematical) of it in which he rather wistfully expresses hope for a story or stories presenting such problems through an "alien" viewpoint. If this can be attained and presented in terms understandable by mere human readers we shall rise from our chair

and lift our non-existent toupee in three huzzahs and a ringing hallelujah.

When as and if it happens science fiction will really be in there.

WORDS FROM AUSTRALIA

by Vol Molesworth

Dear Editor: As you are no doubt aware, American magazines have been officially banned in Australia since June, 1940, but a few copies are sent down under by kind-hearted fans in the U.S.A., and so we are not completely cut off from our favourite reading matter.

I have read STARTLING since its initial issue (and now, through the generosity of Maurice Powell, of San Francisco, own the book edition of THE BLACK FLAME) and so it was with considerable interest that I received and read (in one week-end) the May and July 1948 issues.

First let me compliment you on both THE MASK OF CIRCE by Kuttner and THE VALLEY OF CREATION by Hamilton. Both prewar favourites, they are still turning out very entertaining stories. The faint tinge of Merritt in both these novels made them even more in my line, as I am an admirer of both Merritt and Lovecraft, over whom I see that a controversy has raged in the readers' stamping-ground. I might add here that I liked THE BLUE FLAMINGO by Bok earlier in 1948.

REALITIES UNLIMITED by Emmett McDowell was stimulating, but perhaps this was because I missed a great many issues of STARTLING between June 1940 and early 1948 and have not struck the theme before. WHEN SHADOWS FALL disappointed me, seeing that L. Ron Hubbard was the author: usually Hubbard's plot matches his undoubted literary skill, but this time I think the wordage was wasted on an O. Henry ending which fell rather flat.

THE MASK OF CIRCE, enhanced by the Finlay drawings, was an oasis in a desert of non-stf reading.

It would be gratifying to you, as an editor, to observe how avidly the bumble science-fiction magazine is seized upon by the members at meetings here of the Futurian Society of Sydney. The Society was formed in November, 1939, being almost contemporary with STARTLING, and on November 7, 1948, it celebrated its ninth birthday.

We have held more than 110 meetings (not a great number, considering our nine years life, but remember there was a war in the middle of our history) and at present we have 32 members. Besides the sixteen "full" members who meet every Thursday night at a coffee inn in Sydney, we have "associate" members scattered all over Australia, at such places as Perth, West Australia; Coolangatta, Queensland; Hobart, Tasmania; Newcastle and Ginnarween, N.S.W., etc.

Most of these associates rely on the library of the Futurian Society of Sydney to keep them abreast of latest stf. trends, and the use our library gets, earning on 5¢ rentals per magazine something like 15 dollars in its first six months of prewar use, proves how eagerly each new issue is sought.

Which brings me to the second purpose of this letter. Wartime issues of STARTLING and THRILLING WONDER are very much in demand in Australia. If any of those who read THE ETHER VIBRATES have any issues between June 1940 and (say) Jan. 1948 lying around the house, or know where they can be picked up at second-hand bookstalls, they could be put to no better use than to be sent to Australia. Thanks.—160 Beach Street, Coopers, Sydney, Australia.

Thanks for the epistle with its kind, if belated, words. We'll be interested to hear how you liked (or didn't) more recent SS novels, etc. We hope your plea for back issues meets with a generous response.

DIATRIBE

by JAMES E. HAMILTON Jr.

Dear Editor: Here I am again, this time with a diatribe aimed at your readers. Specifically I mean

those of your readers, and I include myself in this category, who read a story, decide they don't like it too well and say flatly that it's terrible. I have often times panned a story, reread it, found I liked it after all and mentally kicked myself.

As an example of what I am talking about, I quote from Neil Graham's letter in the January SS.

"The HoF 'classic' (I don't think!) was awful."

The story in question is P. S. Miller's Tetrahedra of Space. As it happens, I didn't like it either, but I realize now that I am scarcely qualified to make a blanket statement to the effect that it was "awful". Obviously someone liked it or it would never have had sufficient demand to warrant its republication.

So much for that. Next point, who or what gave Rivenes the idea that Fredric Brown was a newcomer to sf, as is clearly indicated by his statement: "Brown couldn't have written a better novel for his entry into sf." I have, somewhere in the back of my mind, the idea that Brown is an old hand at the game. Who's right, me or him?

Thomas H. Carter brings up a good point in his remark that Kuttner shouldn't limit himself to his brilliant superfantasy. However, while it is true that Mr. Kuttner is a versatile writer, it is not for Mr. Carter to tell Mr. Kuttner what kind of stories he should write. That is the author's own business, entirely, as long as he measures up to his own capabilities. And Mr. Carter certainly is not panning the Kuttner novels, so his suggestion is slightly out of order.

Now we come at last to the stories.

THE TIME AXIS, by the aforesaid Henry Kuttner. While not the equal, at least in my opinion, of such superclassics as SWORD OF TOMORROW, THE DARK WORLD, VALLEY OF THE FLAME, et al, this novel is still a very good piece of writing. It suffers from a slight tendency to drag in places, but it must be rated as a near-classic.

THE SUB-STANDARD SARDINES, by Jack Vance. I don't particularly like this series of stories. Any possibility of Vance doing some more stories of the quality of THE WORLD-THINKER?

MARTIAN GESTURE, by Alexander M. Phillips. So far as I can see, the chief merit of this story is that it aptly demonstrates your point that one of the reasons for the Hall of Fame is to show the advance in sf in recent years.

FLAW, by John D. MacDonald. Where does MacDonald get the idea that the Solar System is shrinking? If one carries out this idea to its inevitable conclusion one is bound to figure out that sooner or later the Solar System will shrink to nothing at all. Maybe so, but I don't quite see how.

THE STORY OF ROD CANTRELL, by Murray Leinster. It is hard to make any comment on this story without reading the novel to follow, because only you and Leinster can know at present how closely they are related. It's somewhat like selecting an all-American football team in midseason.

THE FISSION MAN, by R. W. Stockecker. The best I can say for this story is that it was a good idea.

FORBIDDEN VOYAGE, by René Lafayette. Another series! And a series of historical narratives, of all things! But what a history! This is the first time I ever encountered a history of the future. Two whole months we have to wait for the next instalment. Time can be the most maddeningly slow wench.

Having nothing more to say I will close now—Hortwick, New York.

No comment on your comment—save to say that you are oh, so right about Fred the Brown. Remember PI IN THE SKY in one of our mags back around '43 or '47? And THE STAR MOUSE, published by a rival, has been included in many anthologies. Brown, while not an "old hand" in the Hamilton-Kuttner sense, is assuredly a polished sf veteran.

UNABASHED RIVENES

by Robert A. Rivenes

Dear Editor: The Jan. 1949, SS is the best yet. The

word best is used a great deal in describing the stories that have appeared in your two publications. Readers usually use it when they mean the story that affected them the most emotionally. I would say that generally it is the first of that type that they had read. In my case, it was a volume of H. G. Wells' novels (*Time Machine*, etc.) that made the first and lasting stf impression. I doubt if there will another best to replace those. Is this "first story the best" idea the same with anyone else?

It was a recent subjection to the movie version of H. Rider Haggard's *SHE*, that now prompts me to say something about fantasy and stf in the movies—fantasy and stf as it appears in pulp mags and those classics as acknowledged by fandom.

SHE may be a terrific story to read (I haven't read it) but it is nothing to see if you haven't been exposed to that type of fiction before. Most fiction is so steeped in scientific concepts that even constant stf readers have a tough time following the paragraphs of explanation. How would the average movie-goer be expected to understand what was going on?

The remaining stories are either full of action so furious and bloody that every one would be left gasping for breath, or the ideas are so subtle that at the finish everyone would say "So what does all that prove?" Hollywood is looking for big B. O. and since stfans are a minority (they wouldn't be if the entire population could read SS and TWS) this field is n.g.

The solution? The only one I see if the fans want to see stf in movies is to form a fandom producing unit. If there is anyone besides myself who would rather see them and make them I don't know him. But don't take this as an acceptance of the job. I'm a very busy boy (man).

I always thought that you would have to have two heads to put out your mags. Even with the Mighty Wiged's clues I was unable to come up with the answer to your Mystery Hush-Hush contest. If you are Ellery and Queen I will quietly change over to reading Westerns (ugh). As Milton Berle would say, "Sam!"

Along with the change in volume, you could at least change the cover size so that the pages don't stick out. And also, bind the thing (SS) so I don't have to unbind it to read the inside columns.

I heartily approve of your new letter policy. That's just what I've been trying to do with my letters.

I leave you with this thought. Never do today what you can send into the past tomorrow.

What's this? A third me? And only a few blocks away—157 N. Euclid Ave., Oak Park, Illinois.

We are neither an Ellery nor, very definitely, a Queen. And come you (or should we say you?) we hope to be on the other side of the street. Our first science fiction experience was one of the Burroughs "Mars" series or Verne's "20,000 Leagues under the Sea." And to think that that used to be termed science fiction, fantasy or what have you, along with his "Around the World in Eighty Days!" Wonder what current stf will look like in seventy years or so? It makes one to shudder.

ZIMMER SIMMERS AGAIN

by Marion "Astra" Zimmer

Dear Editor: So once again you give the screwball fans the old b-e-n-e-b-o? You did that once before, by shelling Smaggietooth and his kindred, but the screwballs would not stay abolished. They crept back, shorn of blue bems and Xeno, but built up a new wacky mythology all their own, with purple bems, the Terrible Tris, Mad Mark Marchion (where is he?), the Bald Berger and a weird sort of razzing and letters written in any old code that came to hand.

You'll just have to accept it. I like the lettercolumns the way they are. You have yourself expressed joy at some of my own screwball letters. I like story comments, bad poetry, worse puns and the

sort of good-natured repartee that goes on. SS and TWS have the best letter-columns on the market—now. If you go highbrow on us, devote yourself to high-handed and high-pocket, snubbing of the fans and praise letters with serious scientific theories, one or two things will happen:

1. ETHER VIBRATES will become as deadly dull as the letter section of your competitor (censored). You will become known as the poor man's slick (censored). The opinion of the fans will be (censored).

Or (2) The fans will get sore. They will rally to keep TEV as they like it. They'll kick the life out of you, they'll shoot nothing but screwball letters and more screwball letters and finally you'll either have to abolish TEV altogether or else keep it the way we obviously want it to stay. If No. 1 had to happen, I'd almost rather have no letter section!

Just to prove that I'm not kicking in the dark, or protesting because I know no science to cook up a theory, here goes: Kuttner's THE TIME AXIS was a great story. A very great story. Since you don't, obviously, want story comment or you think you don't, I won't make any comment. Instead I shall intelligently comment on the science therein, since it is obviously your intent that the science, not the story, is the thing.

He destroyed the Nekron in the future, in order to make sure that it would not destroy the world in the future. But in which world did the Nekron exist? I presume the idea of the last sentence (about Washington being the Capital now) was to be that the killing of the Nekron, the changing of the future, altered the Past. In other words, the Nekron never existed. But if it never existed, then he could not have killed it, and therefore the past was never altered.

Therefore if the past was never altered, the future was not altered. Therefore the Nekron will destroy the Future world. If the Nekron has a possibility of destroying the future world, we must assume the Nekron is not dead. If it is not dead, it exists. If it exists, then he was able to kill it. If he killed it, the past was altered. If the past was altered, he never could have reached the same future, and therefore would not reach the Nekron to kill it.

Let me make it even more clear. If he killed the Nekron, then we must assume that the Nekron existed for him to kill. But if he killed the Nekron, then the Nekron never existed. If he did not kill the Nekron, he existed—but only because it was there for him to kill. In other words, the Nekron existed only because he killed it, and by killing it be proved that it had never existed.

The only point which needs proof now is that he ever existed. See what I mean?

Of course that's far more entrancing than the mere statement that THE TIME AXIS was one of Kuttner's finest stories to date, and that it held me spellbound from start to finish. That some of the passages were the finest he has ever written, especially that vast final scene. In a queer way it reminds me of the battle with Llyn in the Dark World, or of the battle with the Glass Mountain in *The Way of the Gods*. But it is greater than any of these because the concept is immensely more vast.

The way in which the Face of Ea pervades the story and haunts it from the first page is intensely thrilling. It's a paradox type of story of a kind which is fascinating. Oh, I forgot. You don't want comment. All right, I won't tell you that FLAW put a lump in my throat, that Magnus Ridolph is as Sub-standard as his own sardines, that FORBIDDEN VOYAGE is the type of thing we need more of in modern stf. I won't mention MARTIAN GESTURE as a typical hall of fame (small letters deliberate) nor will I say that SS is still my favorite magazine.

Instead I shall point out the futility of it all, and sign off without even a vicious comeback at those son-and-sus who poke fun at my great love for Kuttner's stories. Oh well—if they can't understand that, there's no use talking. They're dead—as dead as TEV will be without screwball letters, story and cover-comments, poetry and bad puns. Oh, please, please, don't kick in my teeth, don't sell fandom down the river—III Lenester Street, Albany, N. Y.

Hey, relax, Marion. Methinks you misunderstood our intent. What we were (and still are) growing tired of were those letters which consist of nothing but cryptic and unwitty mals mots in which the author tees off

at the writer of every epistle in the previous issue. As for the rest—well, you should know by now that we enjoy the gags, odes, sack-sad puns et al as much as you do, even in the semi-trptych whatever-it-was verse form you pulled on us last year. Provocative ideas, however, are always welcome—and always much too rare.

Speaking of rarities, by the way, it is definitely such to find you actually praising a Kuttner novel. Tsk, tsk!

PRIDE OF THE NAVY

by Charles Lee Riddle, PNT, USNavy

Dear Editor: The January 1949 issue of Startling Stories is in respects one of the best ones you have put out. You are indeed to be congratulated on the development of this magazine and Thrilling Wonder into the higher-class type of magazine, and not be just contented to meet each deadline with any old type of fantasy and science fiction.

I can't say too much, however, about your lead novel "The Time Axis". For one thing, in my estimation, it was too mixed up. I have the fortune to have two sons, and between them it is impossible for me to sit down and read a story from start to finish at one time. I am always jumping up for the story and tearing them apart and taking away the dishes, etc. from them. And if a story gets too involved, where you have to think back or read back each time you start to read it again, then, for me, it's too mixed up.

One of your short stories could be by far the best—"Forbidden Voyage." The humorous and fast-moving way in which this story was written is interesting, for without realizing it, you have finished the story, and want more yet. It was a shame that Rene Lafayette had the hero of this story to be killed off—for I would like to see more of this type of story. However, I gather that this will be a new series for us readers to look forward to each or every other issue.

"The Story of Rod Cantrell" could have been forgotten. What another series? Out of seven stories in this issue, this makes three stories that fall into a series fashion—and four, if you count the Hall of Fame classics? Next thing you know, all Startling Stories will contain a series of stories. Why don't you just make it book of continued stories?

As for the rest of the stories, "Flaw," just so-so. "The Fission Man" could have been stretched out into a novel, but was good as it stood. Magnus Ridolph's adventures in "The Sub-Standard Sardines" left me cold. The Hall of Fame classic, "Martian Gesture" reads as well as it did when I read it for the first time several years ago.

I like to read the Ether Vibrates, and especially the reviews of the fanzines. Thanks for giving my journal PEON an "A" rating. We've gone monthly now, and are charging 3¢ a copy or 25¢ per year—which with the new postal rates will just about let us break even. We can still use about 20 or 30 more subscribers though.

Whatever became of Oscar J. Friend? Back in 1943, I visited him at your office when I was stationed on the east coast. He came from my home town, Fort Smith, Arkansas, and I would like to get in touch with him again. Any information you can give me will be appreciated.—2116 Edsall Court, Alameda, California.

Oscar J. Friend moved to the West Coast (Los Angeles) in midsummer of 1944, where he worked on a number of movies and with Charteris-Bond et cetera. Midway of last year he returned to New York, where he is currently handling the clientele of the literary agency of the late Otis Adelbert Kline on Fifth Avenue. Any letter addressed there or in care of this office will reach him.

AXIS TROUBLE

by Ed Cox

Dear Editor: Hey, what happened to Kuttner anyway? I tried and tried but just couldn't finish THE TIME AXIS. It started so slowly! God, this is awful! He's such a favorite of mine too. So far, almost everyone I've asked have said about the same thing. Too bad.

FLAW wasn't so good. I mean, the ending wasn't the buildup was but this idea of the whole solar system shrinking! Hmmm!

Jenkins did quite well on THE STORY OF ROD CANTRELL. I can hardly wait for the full-length novel next iss. Promises to be good.

Ahh, another Magnus Ridolph yarn! Terrific, pal. terrific! I hope Jack turns out as many of these as St. Clair has of those Oondandick things. They're so much better! (Vance's series I mean.)

MARTIAN GESTURE was really good. For one thing, it shows by how many years Phillips anticipated the coming Atomageddon. I hope nobody is fooling themselves into thinking it won't come!

Stockhecker did much better on THE FISSION MAN than he did on his previous story. Not bad at all.

"Rene LaFayette" may have a good series here in THE Conquest of Space idea. In this first one, be certain slams the Army and intelligence officers!

Pics this time okay. Finlay and Stevens clutter up their pics with girls too much though, symbolically or otherwise.

May I say a few words concerning my statement regarding the 200-inch telescope and life on Mars? Seems that I've been taken to task for the previous ones.

Now it is well known and I have known that the solar system is one of the places that astronomers pay little or no attention to, even with smaller "scopes than the 200". But I had figured that since this canal question has been raging for so many years pro and con, they'd at least take a snap of Mars to settle it once and for all. The 200 inch has such a tremendous light-gathering power, that they would be able to take what you'd call a snap-shot without the long exposures hitherto necessary. And those long exposures they used to have were usually distorted by air currents even if the observatories are pretty high up.

Now I knew that scientists and astronauts have given the idea of life on Mars some thought on and off for many years but no definite facts had been found. At the time I wrote that letter which appeared in the Sept., 1948, issue they had discovered plant life of a very low form on Mars. They know it exists there now. As far as I know, they only thought that it might exist before.

By the way, this telescope they discovered this life with, is the MacDonald one in Texas. They used a wartime development involving infrared rays (if I remember correctly from the UP bulletin) which increases the efficiency tenfold of any telescope. I may be wrong on details but that's the general idea.

To Seymour Simon, again, I readily admit my life on Mars theory of evolution is definitely lacking but how can we be sure of anything that we don't know about? Not that I was sure about that statement about evolution mind you.

Okay, Robert Rivenes, the earliest use of the words "Science Fiction" I can find are in the December, 1932, issue of Wonder Stories. I think the term is older than that though. Much older.—4 Spring Street, Lester, Maine.

Theoretical son-of-a-gun, aren't you, Ed? We'll have to wait until they get that old lens fixed up before we can ask those Palomarites to sight the 200-incher on Mars.

PROGRESSIVE AMERICA

by Sammy Steel

Dear Sirs: I have been interested in Science Fiction for many years, particularly your magazine, and am an ardent fan of yours.

As I work in an Accountant's office, and I do work quite hard, I find that the only real pleasure and relaxation I get when I come home, is to be able to pick

an American Science Fiction magazine, and spend a few hours reading.

I feel it must be true that America is a land of progressive people, as your Science Fiction certainly reveals a highly imaginative tendency, which many other countries seem to lack.

It is really a shame that these mags are so hard to obtain, and I have a number of friends who feel the same way as I do. Many people tell me, that they think the American mind is adolescent, in comparison with the matured Englishman! I am afraid I disagree very strongly with that statement, in fact, if they only had half as many ideas as your countrymen, Britain would be in a better position today.

I am afraid that the British publications do not come anywhere near your standard of writing, and recently, I have tried many bookshops and private sources in order to get any of your issues. However, I am afraid that it is hopeless. In fact, it's like looking for a needle in a haystack!

If you could possibly print this letter in your magazine, I am sure that my letter would be seen by some fellow Science Fiction readers over there, who would appreciate my unfortunate position.—*Reginald Terence, Leeds 7, Yorkshire, England.*

If you will turn to the REVIEW OF THE SCIENCE FICTION FAN MAGAZINES in this issue, Sammy, you'll discover how to get in touch with the British Fantasy Library, which may be the way out of your current troubles. We hope so.

OUT OF A VOID

by Evelyn Hendrickson

Dear Eddy-tor: I don't know . . . maybe these prairie winds have lulled my mind into a void . . . but I just couldn't get any satisfaction out of my favorite magazine . . . Jan ish . . . *Startling Stories* . . . and it has long been one of my favorites. Honestly I'm worried . . . is it just me . . . or the mag.

Not one darn story this time did I like . . . the "Thelon Man" kept me slightly amused . . . perhaps because it could be so near the truth . . . oh well, always have the next issue to look forward to. . .

I did get quite a kick out of one of the letters printed in this particular ish tho' . . . the person who signed himself "Samuel Trenchard" . . . He gives out with a lot of causes why the letter department (should be cut) . . . Shouldn't be allowed to print the childish and self-dramatization, part of the letters . . . playing for attention . . . etc. . . Well I doubt if I'll ever see another letter that gives out with (my most important egg) as the one he wrote . . . Oh, yes . . . he softened the blow a little by ad-libbing at the end . . . but it makes me sick to see some-one-else's efforts de-litled. I guess most of us do the best we can.

And if I deemed it necessary, I could probably give out with a long and intelligent letter about almost any subject that you would care to choose. Believe it or not, there are a lot of us folks who have more than two grades of schooling. . . I have found though, that a lot of good common-sense will carry you a lot farther in this world than a lot of book-learning. My college education has been more of a hindrance than a help. It has taken me a couple of years to un-learn what it took me four to learn.

So Mr. Trenchard, who is right, you or Columbus . . .

I for one, am not as concerned as to whether the world is round or not, as I am, whether it is right or not. . . Yes . . . I don't care whether the eggs I have for breakfast come out of a round shell or an oblong one, just so they are fresh enough to eat. . . I like something sweet on a salted egg too. . .

Well, I've had my say and whether it meets with your approval or not, Only time alone can tell. I'll be looking forward to my next issue of *Startling Stories*. I'm not condemning all issues because of one. Maybe I had one too many dust-storms in my hair this time. After all, you can't please all the people all the time. . . Just most of the time, hush?

Yours for keeping the cover girls out of hoops.—*555 North Main Street, Carlsbad, New Mexico.*

Say it again, Evelyn, say it again—and

keep them four years unlearned. We love you as you are. Sorry about the January ish, though. We hope you're doing better with us currently.

STUMPED, HE SAYS!

by L. Leon Shepherd

Dear Editor: I knew it would happen sooner or later; Illinois finally stumped an Editor. I am referring to H. T. McAdams, letter on the science of mathematics as applied to the logic of other-world characters. Aside from the fact that Mr. McAdams hails from down around my own ballwick, I would like to hasten to add that he has hit my own nail, one that I could never pin down exactly, right on the head.

I have read and enjoyed pseudo science stories for many years. Yet, as my keenness of perception into the working of minds generally, from such reading and the meeting of thousands of individuals in my chosen work (seizing), has matured and become more discerning, I have become more and more impatient with a gripping plot, wonderful atmosphere, ingenious machines and characters walking among all of these wonderful things thinking and reacting on the same or a lower plane than ordinary people of our own day and time.

I don't want this to be construed as a blanket condemnation. There are exceptions. And, when they happen, you usually find a rave letter from me lying on your desk shortly thereafter. However, the charge, as you said in your footnote to the letter, is true in far too many cases. A shining example is the current lead novel, "The Time Axis," by Henry Kuttner. This story, in my opinion, was a very low, new low, for Henry.

"The Martian Gesture" was the best argument I have seen to date, for the continuation of the "Hall of Fame Classic." The argument has been advanced many times, and I, as an old reader, have always agreed with it, that all STARTLING advances in science have been heralded many years in advance on the pages of magazines such as yours.

Our prophetic author, Alexander M. Phillips, never mentioned the word "Atomic" once in the entire story. Yet it wouldn't surprise me if the authors of some of the NEW (?) pseudo science, "What will happen to the world" stories that have been making the slicks recently, had read "Martian Gesture" slightly more than once. I, of course, am not making any charges as it is immaterial to me. However, the story had such a familiar ring I had to cudgel my mind into recalling where I had read its counterpart, likely. Did you read that lovely pair of stories that appeared in two well known weeklies a few months back?

Don't be misled by the apparent criticism of this entire issue. I have come, the last few months, since my time has been limited, to limiting my pulp reading to your two very good magazines, *Startling Stories* and *Thrilling Wonder Stories*. Since I had to cut down on this type of reading, and have always enjoyed it especially well too, I naturally retained what I thought was the best of the group. And I have seen nothing to cause me to doubt the wisdom of my choice. As a matter of fact, with all of your new bigness, I am complimenting myself on my shrewdness of choice.—*204 East Ryder St., Litchfield, III.*

Danke schön, Leon. You've made quite a solid point, too, in your second paragraph, though the sentence structure has us standing on both of our heads. It is something we have long been working on. Who knows, perhaps some day we shall come up with a yarn that has beings worthy of its gadgets and atmosphere?

OMNIVOROUS STFAPPETITE

by T. A. Venter

Dear Sir: Though I have been a constant reader of science-fiction stories for the past ten years it is only recently that I was fortunate enough to obtain a copy

of your magazine. I was more fortunate yet in being able to arrange for annual subscription and I look forward to the American Mail with keen anticipation.

I must candidly admit that I am not very "cheesy" and enjoy any type of "fantasy" stories but still feel that the type you print are more enjoyable. Though there are some which are not quite up to the mark, the majority are both entertaining and interesting and my greatest regret is that your magazine is not printed weekly. However, my heartiest congratulations.

I have endeavored to contact other Fantasy readers in South Africa, but have been unsuccessful in this respect. If you could arrange to publish my letter in "Startling Stories" and any readers would care to write to me, I would be most grateful.—P. O. Box 57, Ladybrand, O. F. S. South Africa.

Okay—you have your wish and may much good come of it. There are, of course, a number of fans in your general part of the world.

HOT COLES

by Les & Es Cole

Dear Old Snark: We know it's agin' the rules, but we'd like to indulge this one last time: Gene Hyde asked us, in effect, to give an arithmetical expression for the value of pie. We will, Gene, express pie to 1000 places if you will write a letter to TEV with the number googolplex expressed mathematically (i.e., no fair using exponents or word symbols). In the meantime, try using the series pie /4=1-1/3+1/5-1/7+.

Are we still allowed to criticize the Editor? We mean with all the restrictions!—Anyhow, not knowing Bonestell is like not knowing Picasso. Bonestell draws pitchers for another SCIENCE FICTION magazine. We believe his style has more verisimilitude than any other artist in the field.

Again, this isn't pen-pal stuff, but we'd like to call all authors' attention to H. T. McAdams' letter in the January issue. Pardon us while we go slightly gag! In the first place, the mere fact that the epistle saw print (in Startling, of all places!) is indicative of coming attractions. Can it be that Startling is really growing up? And, Gad, sir, where have you been all our lives? Skip the article, please. You could get the point across much better in a story. (Lots of people don't read articles)

Heinlein used non-Euclidian geometry in "—And He Built A Crooked House", and Nelson Bond used topology in a story in which the plot was directly concerned with a practical application of a mobius strip. Aside from those two, we aren't aware of any stories in which "the topological (non-metric) aspects of mathematics" are used. How about developing your ideas along the lines of Leinster's "First Contact"? We anxiously await without!

To get back to the more prosaic business:

1. "Forbidden Voyage" was the best story in the issue. You may not realize it, but the better sf stories are concerned with sociology and use technology as a background.

2. "Martian Gesture" was next. See our remarks above. And a word about two other stories: Dear Mr. Vance, a relatively small change in the Isotherms in the Pacific was responsible for drastic changes in the faunas found therein throughout the Tertiary. And yet you would have us swallow sardines which were put in an entirely different ecological niche and still survive. You would have done better had you chosen some fish indigenous to the planet.

And now we see what is behind Mr. Kuttner. He's trying to emulate the master of Mystic Cultism in sf—Van Vogt. You can't get away with it, Hank. Everyone knows Van Vogt is at his best when he writes stories that begin at the beginning and end at the ending (as in "Slan"). Hank has begun to deal with inexpressible quantities which don't do much for reader understanding. Lay off, willya?—2961 Grouse St., Berkeley 3, Calif.

You're a mighty tough twosome, Coles, but it's nice to hear from you again. How are all the little degrees you've been accumulating?

Pardon us for carping (no play on the sardine business, please note, sensitive reader), but we always thought it was Pi rather than pie, which expressed the ratio of the circumference of a circle to its diameter.

CROSSED FINGERS

by Sylvester Brown Jr.

Dear Editor: First of all let me cast a word of warning in your direction. Obliviating *Sergeant Saturn* was an admirable move. He was on one end of the see-saw. However let me warn you against filling all the way to the other end—science discussions with no alleviating missives containing wit and constructive story criticism. I recall the time when P. O. Tremaine initiated such a policy of straight science discussion. I feel that such action is consonant with deterioration in a science fiction magazine. Suppression of active participation in the story matter of the magazine by the readers via the letter column seems to exercise a deleterious influence in that the readers begin to lose interest and the editor begins to lose touch with the everchanging trends of story interest. The result: poorer fiction and diminishing circulation.

Of course, at the present time *The Reader Speaks* and *The Elder Vibbrates* are not of that type. Both of them are now the best in the field. Yet your remarks introducing TEV in Jan '48 issue indicate that the column may well end up in the dry dreary wastes of TIS—technical topics only. I certainly hope I'm mistaken. Mind you, I think there is a very definite need for intelligent discussion by the readers on any and all subjects relating to science and/or fantasy. On the other hand, the straight letter of wit and the straight letter of story criticism are just as definitely needed.

The ideal letters would blend all three into an harmonious whole, but such letters are the exception rather than the rule. Until such time as this situation is reversed I hope to see letters of all three types appearing regularly. TEV this issue had them—an excellent column albeit too short. Mr. McAdams' letter on more stories emphasizing the many wonders of mathematics especially in re 'alien' cultures is an admirable example of the straight discussion type. Yet if all the letters were in this vein it would most certainly get 'dull—mighty dull'. McAdams' letter was well offset by Weber's wit and Rapp's criticism. And this, to my mind, is just the way it should be.

Now to my story criticism. One story in the Jan. issue caused loud lamenting from this person. I was given to understand that such monstrosities as *The Story of Ned Costrell* were just the type you were so avishly crusading against. A blatant piece of hack with the much-editorially-maligned evil dictator to the fore and the invincible bolder-than-thou hero right behind. Only the apex of the triangle was lacking. Methinks Author Leinster—a very good one—must have had tongue in cheek when he wrote—to paraphrase Weber, I use the word loosely—this story. If *The Black Galaxy* even remotely resembles its introductory story, SS will again sink into the horrible slough of bloody pre-adolescent goo. That would be a shame after the astounding progress away from such junk you have made in 1948. Say it isn't so!

Henry Kuttner's novel disappointed because it wasn't the best story he has ever written for Startling. It was only the second best—bested by *The Mask of Circus* and tied by *The Dark World*. I found that the last few pages had to be reread several times and considerable meditation given them to overcome a 'so-whatish' feeling at an anti-climactic ending. There was more than met the eye in those final pages, though, and the various significances gradually sink in. Kuttner's picture of the middle future I liked very much; I wouldn't be averse to reading more about it. All in all a very fine story.

The HOF was unusually good this time. Martians mellowed with age. Flaw contained no outstanding writing but packed such a terrific punch that it merits second place in this issue. However, I would have appreciated some reason as to why the rocket ship escaped the influence that diminished the solar

system as a whole. 'Twas still in the solar system, wasn't it? Magnus Ridolph pleased but no more. The idea behind *Fission Man* really chilled me. *Forbidden Voyage* amused, but I think Hubbard was a little too harsh on the poor atomic commission. . . .

The illustrations in SS and TWS are second to none. Yet they were partially spoiled in the current issue by the very poor grade of paper used. I hope that SS will soon be using the better grade paper that TWS is already using. Berger's FEM had lusciously-colored skin with the ubiquitous and prominent accoutrements, but the other figures were unusually "waxy".

I'm awaiting the March SS and *The Black Galaxy* with my fingers crossed.—65 Gordon Street, Allston, Massachusetts.

Ho hum—as we so recently said to Marion Zimmer, we have no desire to eliminate amusing letters. We wonder how two such supposedly intelligent readers can so misinterpret a statement. For the sake of the record, the two paragraphs that seem to have caused such panic follow. . . .

"Of late—and it is partly our fault for not applying the editorial shears when and where needed promptly enough—many contributors have been teeing off on each other, writing long columns of answers to all the letters in the previous issue. It's been getting mighty dull, mighty dull, for all those not concerned with the jaspery."

"So, from here on, such pen-pal stuff is out in these pages. We are looking for ideas from readers, not merely story criticism and private jokes. Those that come up with them get the accolade of the Editorial blade or buss (depending upon the writer's gender, naturally)—those that fall to emerge with at least the slim germ of an idea get the basket. Selah."

Where anyone gets the idea out of the above that only cut and dried scientific discussions—a la finnan haddie that never saw the sea—is what we are after should, in the words of the immortal Spivy, "go soak his head in brandy and light it." Enough said. Let's relax and have at least a modicum of fun and games.

SPEEDY STUFF

by R. R. F. Bailey

Dear Editor: Thanks for another batch of good tales in Jan. SS. All the stories were good and I'm looking forward to the next in Rene LaFayette's series. What's happened to R. E. Helaine? He did some good work circa 1940 but apart from one short in SS May '47 I can't trace any recent stuff by him.

How about introducing a few new artists for a change? I don't mean scrap the present bunch—they are all good—but it gets a bit monotonous to see the same style issue after issue. Vary the diet.

Can anyone solve the following for me? I've been taught that the speed of light is 186,000 mpsc. What I want to know is where this is measured from.

When the speed of anything is measured it is usual to have a fixed stationary point to measure it from. How can this be in the universe where all bodies are continually moving? If two stars, for instance, are approaching each other, the light leaving one in the direction of the other will have an additional speed equivalent to the speed at which the stars are approaching, as well as its 186,000 mpsc. In this case the measurement of distance by light years is false, since the length of a light year will vary with the direction in which the two stars, whose distance

apart is to be found, are traveling.—14 Market Place, Melton Mowbray, Leicestershire, England.

Will someone who has taken elementary physics tell Frere Bailey that old experiment with the long pipe and the mirrors by which the speed of light was first "measured"? We simply haven't the energy to look it up at this point. All in all, just the sort of thing we asked for in those two rotten-herring paragraphs which we quoted just in advance of this missive.

A KILLER

by Mrs. Jacqueline Slaughter

Dear Sir: Have been reading your mag for about six or seven years and I have liked most of your stories. Mrs. Eva Firestone mentioned "The Moon Pool" and its sequel "Conquest of the Moon Pool." If she would be interested in reading them again they can be found in two copies of FFM—I don't remember the exact dates but they are both 1948 issues.

Have just finished reading the January issue and my comments are as follows—

THE TIME AXIS—pretty good but I didn't like the last two chapters.

THE SUB-STANDARD SARDINES—no comment.

THE MARTIAN GESTURE—very good.

FLAW—not so good.

THE STORY OF ROD CANTRELL—pretty good but not long enough.

THE FISSION MAN—very good.

FORBIDDEN VOYAGE—excellent.

GESTURES was the first HOF story I've read that I cared anything about.—P. O. Box No. 4, Keego Harbor, Michigan.

Thank you, Mrs. Slaughter, thank you very much.

DO OR—

by Cliggord Dye

Dear Editor:

How!

I'm back (obviously).

A report on the January issue is forthcoming.

Brace yourself.

First and foremost, **THE TIME AXIS** by Han Kuttner. WONDERFUL, SUPERB, MARVELOUS—to say the least. A short time ago Kuttner seemed to be in a rut; his stories (novels, that is) being much alike, but with **MASK OF CIRCE** and now **THE TIME AXIS** he has vindicated himself thoroughly.

The other stories finish like this. **MARTIAN GESTURE**, a Hofer that is really good; **THE STORY OF ROD CANTRELL**; **FORBIDDEN VOYAGE** (I like series, and I like Leinster and LaFayette); **THE SUB-STANDARD SARDINES** (I liked this); and lastly, **FLAW**.

To Robert A. Rivenes, UNIVERSE did not mark Frederic Brown's entry into sf. He is a veteran and well-liked sf author with some very good stories to his credit.

Page 153. You say the artist's name is Verne Stephens, on 164. It is Stevens. In the past you have said his name was Verne S. Stevens and his son's name I. Sterne Stevens, and vice versa. On your knees, knave.

What was the greatest number of stories Kuttner had in one issue of SS or TWS? If I remember correctly, back in a '44 TWS he had three; **A GOD NAMED KROO**, **TROPHY**, and **SWING YOUR LADY**.

The high priest of Starling is a strange man.

Imagine! He writes blurbs that sens!

The other night I found it difficult to sleep, and when I can't sleep I count all the charms about—not

STARTLING STORIES

I mean, I latch on to a thought and follow it in six directions, all at right angles to each other.

So—this is addressed to Birnbaum and comes under This And Other Worlds Dept.—I started thinking of a color photo I had seen of Mars and remembered Lowell's theory of plant life on that planet which many astronomers accept, and I decided that if it were true, one of the following must be accepted.

1. They are like Earth plants, in which case there must be animals to provide a balance to the oxygen-carbon dioxide cycle. That would mean evolution, and evolution means intelligence.

2. Martian plants are not like Earth plants, with some other gases substituted for oxygen and CO₂, in which case animal life could be different too and there would still have to be a balance. Again there would be evolution.

3. The Martian flora are so different from that of Earth that they need no air at all. Then neither would animals.

And have you noticed that of three possibly inhabitable planets, Venus, nearest the sun, has the thickest atmosphere, Earth, next and Mars, the farthest from the sun, has the thinnest. Why?

I'll close with this. I don't want trimmed edges. I want better covers. Sif is growing up. The covers should adapt themselves to the change.—Box 2332, Williamson, W. Va.

You settle that air-envelop query for yourself. We shan't until we get to the planets in question. As for the Verne Stevens-Vern Stephens messup—well, if you had a not-so-small member of your personal clan nuts about the Boston Red Sox you'd understand this one. All we heard all summer was (when it wasn't Ted Williams) Vern Stephens this and Vern Stephens that and wasn't he a hot hunk of shortstop. Answer, of course, he was.

RICKETS

by Rickey Slavin

Dear Ed: The January issue of SS is before me and I think I should comment on it.

THE TIME AXIS—Kuttner is still one of my favorite people but either I was too sleepy to appreciate this or it really was confused. I enjoyed it very much despite the mild confusion.

THE SUB-STANDARD SARDINES—Vance. I think the unscrupulous Ridelph is a little too good to be true. Neat, however.

The Ho! novelet was deserving of its place.

FLAW—MacDonald, I liked this the best of all the stories in the ish. Perhaps I am an unduly emotional person but the concept of the contracting universe and its purely emotional effect is a rather new twist to an old idea. The idea being, of course, that the universe is contracting, not expanding. To my knowledge space exploration is not often treated from the point of view of the women the explorers leave behind them.

ROD CANTRELL—Leinster. Fairly good.

THE FISSION MAN—Stockhecker. Fair.

FORBIDDEN VOYAGE—Rene LaFayette. I know that others will say so too but this is the most vitriolic attack on brass hats and bureaucracy I have ever read. As a story it was only fair but as a condemnation of the present methods of government it was wonderful. Fine satiric touch.

I think that, at the risk of repeating myself, your publications go up in caliber each time. Alas, although I am no judge of it, I think the rest of your reis are think so too. Thanks a lot for your interest in the fan world as evinced by the Fanzine Review, etc.—1626 Coney Island Avenue, Brooklyn 30, New York.

You can go right on repeating yourself that way, Rickodemus.

We love it.

NEOPHYTE

by Dennis Hayes

Dear Editor: Although I've read stf mags for many years this is the first letter I have written to any of them. Have just finished reading the January issue of SS so perhaps you will be interested in my comments on the stories.

THE TIME AXIS—Kuttner. After reading this yarn I could not be sure that you have not got the story confused with the author's rough notes of the plot. If it had been condensed to, say, a page and half of well-spaced print, it would have been eminently satisfactory and would have blended with the advertisements quite well.

THE MARTIAN GESTURE—Phillips. Very satisfactory indeed.

FLAW—MacDonald. Quite good.

THE STORY OF ROD CANTRELL, FISSION MAN, FORBIDDEN VOYAGE were very good also. No comment on the illustrations.

The magazine as a whole was extremely good and, if continued on its present plane, will always be in great demand over here.—15 Madison Gardens, Berkley Heath, Kent, England.

Goody! But missivist Hayes has pulled a switch on us methinks. Instead of trimmed edges, he wants trimmed stories!

THE THRILL OF IT ALL!

by Gwen Cunningham

Dead Ed: I just finished the January ish and gosh, what a thrill to get such a nice hand from Joe Schiumburger. He seemed to emit the only cheer but gosh, one real good cheer like that—gosh, I'm overwhelmed (we're rapidly growing a bit overwhelmed ourselves, Gwen—Ed.).

Gosh, fellows! One reader gave a really wonderful lot of talk to you—that one was H. T. McAdams. I only wish I had known exactly what he was saying. It sounded sooo wonderful. Hurrah for him!

I regret you are no longer accepting strictly rating letters (we have to let some in for various reasons, Gwen as the preceding epistles alas reveal—Ed.) because once in awhile my brain stagnates and I fall back on ratings in the belief you at least get a reader's stamp on stories out of it all.

Oh well, you're really right. I've been so bored by other readers' rating letters. My own, of course, seemed worthy, even intelligent (!). I must confess a few TEV readers have me jealous because I'm not so smart on science as they. But I'd like to defend stf and the authors of same on a criticism brought up by one (how many?—Ed.) Michael Wigodsky, wherein he is fed off because this or that in some story taxes his credibility.

Now firstly, nobody ever said we had to believe a single word. We can read it all for fun. Your magazine deals in pure fiction anyhow. Secondly, Mike probably hasn't grown up enough yet to learn a very true fact about life (give with them birds and bees, sister—Ed.).

We all go on and on and on and on the way we find things we never would have believed in have come true (buuh?—Ed.). In my mother's time, radio. In my very own time the bazaars, the superstore, jet planes and, incredulous beyond belief, the atom bomb (Incredulous is the word for it—Ed.). All fiction a few years ago—dreams in someone's mind—no doubt laughed at. I know a woman who remembers seeing people standing behind Henry Ford and gesturing to others that the guy had wheels in his head. He did too—darned good ones.

So, in a fiction story, one needn't believe but enjoy. And in a story beyond credulosity, dear readers, old and young, exercise your imaginations and your common sense, all jumbled to come out with the great fact that what is not today may be tomorrow, and then won't your face be red (won't—Ed.).

Not that your story is to be taken as gospel on my say so, Mike. But I wish you and others like you would stop buying fiction and then cussing out the stories for being unbelievable. It just ain't cricket, pal.

In passing, Ed. Lee Budoff's letter was really a cute

one. I hope she writes in often (amen—Ed.).

Would you like my own private opinion on all this Hall of Fame controversy? Keep it going! It's a mistake to say we don't care for stories that are not written in a more modern pattern and manner. When you say that, don't say WE. There's a lot of us who don't feel like you guys, see? I'm for the HoF 100%.

Editor, dear, have you ever held a contest (please, don't throw that brick!) for readers who fain would write? If you ever did, I'd try just for the h---l of it and no doubt lose. But oh, what a thrill trying! I always wanted to write—don't we all?

All in all I'd better underline the fact that I love your magazine, the stories, the readers and ye editor very dearly. The January issue was tops and you got me pal—forever yours!—5519 MacArthur Boulevard, Oakland 5, California.

Listen, forever ours, we ran a so-called Amateur contest for years—and it finally died because virtually none of the stories were fit to print. If you want to write, do so, we'll gladly read your stuff and, if we cannot purchase, give you as constructive criticism as possible. We love you, too, Gwen.

BRIEF CASING

by Benjamin Birnbaum

Dear Ed: In keeping with my newly-adopted policy of sane letters, I will give a brief rating of the stories and then struggle on to better things.

However, things couldn't be much better, for this is the best issue you have gotten out in a long time. Why, wonder of wonders, even the Hall of Fame special was good, and the Kuttneresque, which I usually abhor, was marvelous. Truly, the age of miracles hath not yet passed! Maybe Kuttner has something after all. That novel ranks with Wells' THE TIME MACHINE. Consider me a Kuttnerconvert.

Dear old Maggie Ridolph was slightly boring this time. Say, Ed, tell Vance to end the series before he hecks it up too much, willya? Remember Kim Randell? The shorts were all above average, but I'm slightly partial to THE FISSION MAN and FORBIDDEN VOYAGE for the high honors. Too bad there was no article, though.

Your comment on my letter in this issue gives me some ideas, so I think I'll stick my inquisitive and rather expansive nose into this armament argument. In a close engagement, presumably with rocket ships, the exhaust from the ship's spaceship or a gun adapted from it would make a good weapon.

The great disadvantage of using the jets is the fact that they are, or should be, rigidly fixed in the ship's hull, but this may be offset by the fact that there are jets pointing in all directions—main jets, probably at the stern; bow braking jets; and the steering jets at top, bottom, and sides—and so the entire ship can be protected.

An atomic spaceship would probably be some common substance—even water—made radioactive by a pail, and either used as an engine, somehow, or ejected directly from the stern into space to provide a reaction. This exhaust, under high pressure and made up of incandescent particles of matter, also radioactive, could take care of anything that puts up an argument.

For instance, if it hit a ship's hull, it might melt the hull or it might not, since the hull would be made of heat-resisting alloys, but it would contaminate the hull with radioactivity and probably the inside of the ship too, to some extent. The gun adapted from that would be your atom-gun. Technicolor doughnut or not.

Incidentally, I've just got another brainstorm. Why don't you, if you want to be obstinate and stick to the HoF, instead of reprinting one HoF story every issue with the modern ones, put out a wholeish of reprints, so that the stories of ten-twenty-thirty years ago (as Tom Jewett so quaintly puts it in TSV) will not suffer in comparison with modern ones.

Then you can really tell which were the best yarns in SF of bygone eras by comparing them with each other. That way you can put in some reprints that are

too long for the present HoF. You can put out a reprint issue to every five regular issues. Some of the old covers can be reprinted this way, too. That is, some of the good ones.—P. O. Box #26, Victory Mills, N. Y.

Benjamin, try putting an electric bulb behind each tooth to light up your smile—you'd better be visibly grin when you say such things. An issue of reprints would be another magazine—and you can guess which one. As for your doughnut gun, we have a hunch you'll be hearing from that one. We'll be interested to see what the Weapon Shop crowd has to say on the subject.

ANSWER TO BIRNBAUM

by Rose Davenport

Dear Editor: First let me congratulate you on the grand January issue. Every story is tops. "The Time Axis" is a very good story but my favorite is "Flaw". Something new in space travel's consequences. Very interesting and thought provoking.

In reference to Benjamin Birnbaum's letter about the space travel forum—very good idea. I am greatly interested in the ways and means of space travel. It seems to me to be very close after seeing the Flying Wing the other day. There is definitely a plane of the future.

I haven't any startling ideas of my own and would be very interested in other people's. So come on, you guys and gals, give with your ideas—127 Cherry Avenue, South San Francisco, Cal.

Or "I'd like to get you on a slow boat to Venus" or something. Anyway, we agree with la Davenport—come on, guys and gals, give!

ONE WHO GIVETH

by Milton Spohn

Dear Editor: Several things have prompted me to write my first letter to any magazine, one of which is your remark asking for ideas from readers.

I should like to see something in the way of a biographical novel—a story such as the life of a scientist of the year 4927 or the record of a pioneer on planet Ohanygoch of the sun Gesundheit. Should also like to see an occasional article of the purely speculative type wherein new (or old) discoveries are shown as modifying future civilizations.

Can I bust in with a little information? A letter in your last (Jan. 1949) issue berates Hamilton. While I am no great admirer of that author, may I point out that he was writing science fiction long before Russell, Heinlein and most of the others. As a matter of fact he was the originator of the world-menaced-but-saved-at-the-last-second stories.

Glad you like JKBangs. Thought that "Pursuit of the House Boat" was even funnier especially where Sherlock Holmes deduces speed, direction and size of a vessel by bubbles on the ocean.—1337 Merriam Avenue, Bronx 52, New York.

A biographical novel—hmmmm. Well, it's an idea, possibly a very good one. Now all we need is someone to write it. We'll see what we can manage. We quite agree on Ed the Hamilton—but not of the second "House-boat." A matter of purely personal taste, choice or what-have-you.

YOUNG MACDONALD HAD A YARN

by Tom Pace

Dear Ed: Another month, another 88. And another HK novel. Someday some great man is going to put together a volume of the collected works of Henry Kuttner and make a fortune. I've only read *The Time Axis* once . . . I think I'll read it at least twice more. It's that kind of yarn.

Ah, Finlay . . . I like these better, I believe, than any he's done since the war. Maybe with a couple of exceptions . . . but not many.

The Flew was good MacDonald, whoever MacDonald is. Or is he? Not that I think he's Kuttner. He's one of the few I don't think is HK. For that reason he probably is.

He couldn't be just plain MacDonald, could he? This panneau stuff is turning fandom into a madhouse. Deep and ironic laughter from the wings. . . .

Likewise, The Story of Rod Cantrell was good Leinster, but was somehow unsatisfying . . . maybe the forthcoming Cantrell novel will clear that up.

The Sub-Stander Sardines I liked very much. Magnus Randolph's various adventures are the best versions of this type of story yet to be served up to us . . . The super-scientific space-detective, quite devoid of ham and hock, and backed by beautiful mood and atmosphere, I think Vance's picture of a galactic civilization the most complete and satisfying yet to come along.

Of course, I shall now expect a valentine from Mr. Vance. . . .

Merion Gesture is typical of the better class of story to come out in the Victorian Age of SF. I read the HoF yarns, and enjoy most of them, but I would hate like hell to read a whole magazine full of them.

Forbidden Voyage . . . this could be a great series! LaFayette is off to a fine flying start on it, anyway. He seems somewhat bitter. It could not be that he has recently run into some Fascism-in-HighPlaces stuff? Shhh, Pace . . . It can't happen here.

This is a beautiful humor. It'll probably get him investigated.

The best to last, I been saving . . . Stockhecker's The Fission Men. This is a yarn to last! What a story . . . and what an idea!

Stockhecker, I love this. Seriously, it is fine. I hereby nominate it for the All-time tops list. How long has it been since a story with a really new idea came to my attention, such as it is?

I think Mr. McAdams' letter is possibly the most valuable you've published since I've been reading 88 and TWS. I think I'll submit you an "alien" story I have in mind (but not on typewriter, being pleasantly lazy). Boy, is it alien! I expect to hear from the boys at Ellis Island any day now. No kidding, though; the fact that I have gotten only through Analytical Geom hammers me a great deal (By the way, Ed, I passed it!) but I'd like to see an article on this . . . by McAdams, or somebody. Somebody's a pretty good boy, don't you think, Ed? Has a good style. . . .

A cheer for Schaumberger. A bigger one for our Ed . . . or is he that well-known nobleman, the Marquis of Archie?

I
refuse
to jump
on this
ah . . .
band-
wagon.

My poetry, if I wrote poetry, wouldn't be freverse. No.

Since you hint (ha) that we don't get printed if we don't produce ideas, and since I like to read my letters in magazines, as who doesn't, here's the best idea I have had since I suggested using gin for antifreeze and antifreeze to replace gin.

Consider time as a fourth dimension (whoa, McAdams, I said consider it as such, not assume it is as such!), then if you take the word dimension as meaning exactly what it does when used to refer to height, width, and depth, it becomes obvious that said "fourth dimension" is not, cannot be, a mystical land of grey, swirling shapes, or any of the other crud that has been assumed about time-travel.

I instead, you could postulate the universe . . . all right, a universe . . . in which worlds, suns, stars and whatever are located not only by reference to spacial coordinates as we know them now, but also by reference to temporal coordinates . . . in other words, a

person able to observe this "four-dimensional" universe could see that Terra, 1948, is exactly 246,000 miles (use own units, please . . . miles, knots, zzyzaards, etc.) and twenty years away from Luna, 1928.

New York of 1929 (*horroris*) is just as real a place, right this minute (hmmmm.) as Florida is to me as I write this letter. It exists in this pet universe of mine, right over there, three thousand miles and nineteen years away. Conversely, or something, the future . . . the infinite future of the universe, if you want to use a lot of "sloppy big words", is just a part of the universe. Tom Pace, of March 3rd, 1953, is quite another person entirely from Tom Pace of this second, separated from me by a few years' distance, plus whatever ground I may cover between now and then.

For this big unworldly idea I am thoroughly indebted to Alfred Korzybski, A. E. van Vogt, et al.

I am currently writing the Great Science-Fiction Novel on this idea (I have shelved my Great American Novel temporarily, having come to the uncomfortable conclusion from my historical researches that the South won the Civil War), so you guys lay off.

What a guy. Not content to bandy words concerning jazz, and other off-trail subjects, with us fans, he drags in sports anecdotes. I've read your sports stuff, Ed, (unless my identification of you ranks with my prediction of who was going to win the election!) and liked it . . . I'm a disappointed, but not regenerate, halfback, myself. Bobby Dodd, are you reading this?

I think I'll wind up now. This is probably far too long already. After all, we do not want to crowd your wastebasket, do we? No. By the way, the TEV ranks don't seem so crowded these days. Where's Kennedy The First? And where oh where is Westbrook Sigler? —1720 Southwest 11th Street, Miami, Florida.

The above we enjoyed heartily and shall now take time out for a bandy and soda. You're probably and almost certainly sadly correct on that identification. Speaking of Bobby Dodd, did you ever see Cliff Battles at his peak with the Redskins? I have a sneaking hunch that that 1937 Washington backfield with Baugh, Battles, Pinkert and Riley Smith was just about an all-time high. They mopped up everybody in the circuit.

A MATTER OF CHARACTERS

by John Doves Roberts

Dear Editor: In re the H.O.F. most of the people who scalp the old stories bring the complaint down to one thing—characterization. I wonder if it ever occurs to them that character sketching was out of place there. Character development in a story is more a matter of existence than of value. Haydn and Mozart wrote many things in sonata form that completely left out some of the most cherished conventions of sonata-form. And they are the tradition of form. Swift managed to get along with perfectly static people.

In the sort of story that was published in SF not too long ago, character writing would have been like icing on cornbread. That sort of story written now is no good, just as a piece of music written in the style of Mozart now would be no good. Tradition has frozen about both and attempts to revive either except with the works written then fail. Why not praise or blame them for what they are instead of for what they don't even try to be.

I don't say that tired allegories and space operas are any better than today's attempts at fiction, but some of them were—and are, still. Everyone seems to think that the development of SF is on an even upward curve (nothing is that simple), so we think that the present accent on "naturalness" is automatically an advance. The stories remain the same distance from literature as long as you are a pulp—with larger percentages of breakthroughs all of the time than any other pulp. "Mistake Inside," still your best since I started reading your magazines; about three years ago. I noted that those who panned it praised the most hopelessly ordinary stories in the issue.

comparable. Incomparable in its class, that is. I don't believe there will ever be a story that will beat THE VALLEY OF CREATION, but that is a different type of yarn. The style (I study style with most profound interest) was perfect, unsurpassable and deeply impressive. Give H-K a garland of orchids for that piece of artistry.

I make it my business to hate Magnus Ridolph stories but I'll have to admit that this SUB-DINES yarn was pretty good. The Finlay illustration looked like so much spaghetti in a concrete mixer but he had to spend lots of time on the jobs for TFAxis, I suppose, so he didn't have time to really apply his whammy style.

FLAW wasn't a bad little trick. Bumpy as Mac-Donald yarns go but not bad. Nice idea there. Think (No offense J. D., as everybody knows that there is no one like him) what Bradbury could have done with something like that.

Leinster was right in there with the Rod Cantrell yarn. I personally think that Murray Leinster is one of the best STF writers of the last two decades. His stories always get by even if it's only the "Leinster" name that does it. You simply take for granted that you are going to like a story if it is written by Murray Leinster. Agree, fandom?

I think R. W. Stockecker was at one time project X. THE FISSION MAN should stand in bed. Phooey plus.

The HOF was good, as usual. Better than the last one anyway. I didn't like the illustration though. Stevens, wasn't it?

Last of all but not least was FORBIDDEN VOYAGE. This story was just good. It was nothing spectacular, or sensational, just plain old good. I like the way LaFayette writes. Smazzy, as they used to say.

The Vibrating Ether was on the griddle this throw. I guess Jewett's letter took the cake. I always expect to roll in the aisles when I start reading a letter of his. The Firestone gal had a pretty good episode too. Sounds to me like she asked you if there was a sequel to the Moon Pool yarn just to see if you knew that much about past STF outside the doors of TWS & SS. Never trust a woman.

I can't help wondering why you didn't print the letter I wrote commending on the September issue. Maybe because I didn't send it.

I will finish this off by telling you that I will read SS and TWS until the Martians stop gesticulating. It is by far the greatest mag on the markets—1431 2nd Avenue S.E., Cedar Rapids, Iowa.

If la Firestone's idea was what you suppose, she found out all right. We know from nothing, strictly from nothing. Hurrah for your opinion of the HK epos. We thought so too.

AS GOOD A TIME AS ANY

by Irving Zeid

Dear sir: Have never written to a ss mag before, but this seems as good a time as any. The reason is simple: never had the nerve! However, after perusing the January STARTLING, the urge seized me. I MUST say something about this issue or bust in the attempt. The standout yarn of the mag far and away was the Hoff-er, "Martial Gesture", by Phillips. It carried a moral which should not be overlooked by thoughtful people. It carried a terrific impact, which failed to elude me. Congratulations to Mr. Phillips for a remarkable story, and to you, Mr. Editor, for having selected it for re-publication.

Frankly, up to now, the Hoff tales have scarcely justified their resurrection. They would have been better off to remain in the oblivion from which you intentionally rescued them. However, "Martial Gesture" more than makes up for your previously poor selections. More, please!

The rest of the mag was, as usual, up to par. Your twin publications, SS and TWS, are so far ahead in the sf field, that any comparison is laughable. I've read a rival Mag. Phew! I'll never stray from SS or TWS again!

Well, for an initial effort, this thing has gone far enough—so, I'll say so long and thanks for many pleasant hours of top-grade entertainment in the realm

of space-ships and extra-galactic journeys, and to the guys who make it possible—the writers. More power to 'em!—8102-26th Avenue, Brooklyn, New York.

Glad to have you with us, Irving, and thanks for the old oil. Drop in again when you have an idea that seems worth taking a licking in these columns. And make it soon.

THE SMITH A MIGHTY MAN. . . .

by Richard R. Smith

Dear Editor: THE COVER: phooey. Science-fiction readers want science-fiction-covers on their magazines.

THE TIME AXIS: Splitting the universe in half? What next? Splitting infinity maybe! Kuttner wrote a good story; it was tops. Bet he got the idea from the time mix-up in his own story, HAPPY ENDING.

THE STORY OF ROD CANTRELL: Second on the list: Leinster is getting back in style. I first read his REGULATIONS and screamed. Then, I read his THE MAD PLANET in another mag and it was really good. THE GHOST PLANET was dull. What will BLACK GALAXY be like? Fun isn't it? Sitting back and waiting to see how good an author will be compared to his past stories? Great Sport!

THE FISSION MAN: Third on the list. Good writing.

THE SUB-STANDARD SARDINES: I first read Vance's THE UNSPEAKABLE McDINCH, and it shocked me so much all the way through, I never got up enough nerve to read his SANTORIS SHORT-CUT in another iss. Well, TSS was a pleasant surprise.

FORBIDDEN VOYAGE: Was number five only because the others were so good. What's matter with LaFayette. peed at the F.B.I. and red tape or something?

FLAW: Was written good. Where did the space-ship go?

MARTIAN GESTURE: The usual stuff, probably written before it was usual. Why don't you cut out the HOFAme anyway, when all your readers don't want it? Sure at us or something?

Now, I would like to make a little request. I would like very much to start a poll among the readers of SS and possibly TWS. All the fans could write their opinions to me and I could tabulate them and find which stories were the most popular. Inform TEV. I have plenty of spare time to do this. I work in a bank. Banker's hours with Saturdays and bank holidays off, so time is nothing. I can type and I am interested in Science-Fiction (I read eight different sif mags) and plan to write it some day; could learn a lot from listening to complaints and praises. Besides, I represent a cross-cut of the country by being named Smith.

How about it? If this letter is printed, just write your opinions of the current SS copy to me. I'll tabulate them. Inform TEV which stories were best according to the readers. Might keep the authors on their toes. No author would want to be at the bottom of the list! Write your opinions as soon as possible!—6 East 46th Street, Wilmington, 269, Del.

Next week—sf prozine stories measured on a laffmeter. Smith's scheme, to us, is strictly for the birds—but if any of you want to try it go ahead. We awaited the results with bated, if not baited, breath.

And so, having reached the proverbial end of the equally proverbial trail, we bid you adieu—until the next time we come ariding on this circuit—some sixty days hence. Keep the letters coming to THE EDITOR, STARTLING STORIES, Suite No. 1400, 10 East 40th Street, New York 16, New York. Thank you!

—THE EDITOR

SCIENCE FICTION BOOKSHELF

REVIEWS OF NEW BOOKS

DIVIDE AND RULE by L. Sprague de Camp. Fantasy Press, Reading, Pennsylvania (\$3.00).

Those who are fortunate enough to read the two short novels—"Divide and Rule" and "The Stolen Dormouse"—by Mr. de Camp, included in this volume, are in for a thoroughly entertaining session. There is laughter, much of it, in both stories as there should be in any sound satire—but there is also a highly provocative need of penetrating ridicule of human pretension which will give said fortunate ones furiously and somewhat ruefully to think.

The stories themselves, as vehicles for satiric and occasionally ribald commentary,



are simple. "Divide and Rule" portrays a world decimated and enslaved by extraterrestrial pseudo-rodents known as "hoppers" thanks to their kangaroo-like manner of locomotion.

To keep humanity happily subject they have turned him back to a sort of cockeyed feudalism, complete with horses, armor, swords, spears, shields and two-way radios. The hoppers themselves have retained all superior means of transportation, death rays and the like, have virtually abolished all book learning to make sure mankind does not learn enough to recreate a science.

Thus we have Sir Howard Van Slyck, second son of the Duke of Poughkeepsie (a Vassarless Poughkeepsie, of course) setting out on a knight errancy reminiscent of that of any of the Arthurian bravos in Mark Twain's "Connecticut Yankee." He runs

[Turn page]

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afool of hopper law when engaged in rescuing an imprisoned damsel, slays a hopper and finds himself part of a long-nourished underground that is preparing to rid the world of its overlords.

As we said above, the plot is simple—but the implications prod at human foibles with a surgeon's needle and the situations are consistently hilarious.

"Dormouse" involves a future humanity unconquered save by its own corporate interests, with an amusingly pragmatic society dominated by such great "houses" as Crosleys and Strombergs ensnared in its own perfection to the point of absurdity.

The "dormouse" involved is one of a group of humans who, fed up with the confusion of the times, has paid a goodly sum to be put to sleep for a century or so in the hope of waking up to better days. These dormice are supposedly inviolate, but this one in particular has had his sleep rudely broken because he possesses information which all the big corporate houses feel they need.

Horace Crosley Juniper-Hallett, the thoroughly befuddled hero of our story, gets inextricably entangled in the doings, even to the extent of marrying the daughter of one of the "nobility" of the rival Strombergs.

All in all "Divide and Rule" seems to us to be one of the very best fantasy publications we have yet read. We advise you to get it.

SPACE CADET by Robert A. Heinlein. Scribner (\$2.50).

Mr. Heinlein has here written a juvenile for space-minded youngsters, taking his hero, Mat Dodson, from a future Des Moines, Iowa, through all the rigors and intricacies of training to become a member of the Interplanetary Patrol, whose members are bound to maintain peace at any price on all the worlds of a planet-spanning civilization.

Employing all of his mastery of creative detail, the author has come very close to the attainment of reality in describing the various tests and tribulations Mat and his buddies must undergo before they receive their coveted commissions, winding up with an assignment on Venus.

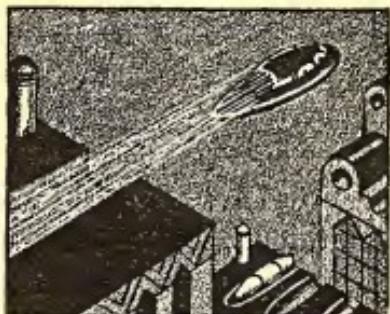
The whole book is cast in a sort of Ralph Henry Barbour—"Tom Brown's School Days" mold which should give it wide appeal among young men and boys who look longingly at the night skies with ideas of space travel in mind. We hope it attains the limited success it deserves.

Cluthie Sons, Dept. 33, Bloomfield, New Jersey

REVIEW OF THE SCIENCE FICTION FAN PUBLICATIONS

MOST interesting arrivals of recent weeks have been two editions of the dignified and highly professional JOURNAL OF THE BRITISH INTERPLANETARY SOCIETY, which tackles problem of interest to all sf lovers in a thoroughly enlightened and adult manner.

Leading the September, 1948, issue is an information-packed and thoroughly engrossing study of the Naval Ordnance Test Station at Inyokern by L. J. Carter, secretary of the Society, who evidently knows whereof he writes. Arthur C. Clarke, not unknown



to readers of this magazine, takes a well-aimed tee-shot at the President of the Royal Astronomical Society of Canada.

The November issue features Dr. Olaf Stapledon's internationally noted address on Interplanetary Man and on a discussion of same. Both editions contain a collaboration in serial form by Messrs. Shepherd and Cleaver on the atomic rocket to come, as well as society reports and announcements and other regular departments. We plaintively wish we had such a publication in this country.

John Gunn, Manager of the Milton's Head Hotel, Nottingham, England, has contributed several editions of his Booklist, a regular report upon the British Fantasy Library, which has been doing such yeoman service toward keeping war-starved British fans up to date

[Turn page]

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in US stf. The Taurasi-Sykora team of Long Island City has come up with a single-sheeted British Edition of their FANTASY-TIMES, which we hope ties international bonds a bit tighter.

All in all, what with new pro writers like Temple and Clarke, editors like Walter Gillings and burgeoning fanaticity, England seems to be stepping up its stf pace. We hope they keep right on burgeoning.

The TORCON REPORT is finally in and, save for an intriguing if hardly relevant (?) full color photograph of a kneeling knude, is a neat, cohesive and exhaustive job, the best of its postconvention kind we have yet seen. Congratulations to Ed McKeown and all the others who had a hand in it.

Another ambitious project which has been belatedly brought to Ye Edde's attention is FANTASY BOOK, edited by Garret Ford of 8318-20 Avalon Boulevard, Los Angeles 3, California. Since it appears to be a more or less professional job—priced at two bits, 12 issues \$2.50 (\$3.00 in "Deluxe edition"), perhaps this is not just the spot to review it but we don't know where else to handle it.

It contains a John Taine serial, a Festus Pragnell ditto and such well known fan-names as Basil Wells, Forrie Ackerman, L. A. Eshbach and Gene Ellerman. We wish the best of luck to a potential competitor—if only it isn't too good.



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And now for the A-list, so man the guns.

ALIEN CULTURE, 4718 Forest Hills Road, Rockford, Illinois. Editor, Jim Leary. Published irregularly. 15¢ per copy, 4 issues 50¢.

An elaborate and rather well-drawn symbolic cover by D. Bruce Berry heads and highlights this newcomer, which is internally spiced with a Keller parable, a Darketharticle in which he describes how he bested the preconceived notions of the literary critics with his last anthology and several others. Interior artwork is unfortunately very low grade, unlike the cover. On the whole, a freshman to watch closely. Very promising.

DAWN, 2050 Midland, Louisville 4, Kentucky. Editor, Lester Fried. Published bi-monthly. 10¢ per copy, 3 issues 25¢.

Another newcomer of promise, centered in the letter-size field with neat if subtalented artwork and a couple of articles, including a West Coast report by the lively E. E. Evans, to vary the pace. We hope this one gets the support which will enable it to stick.

FANSCIENT, 3435 NE 38th Avenue, Portland 13, Oregon. Editor, Donald B. Day. Published quarterly. 15¢ per copy, 50¢ per year.

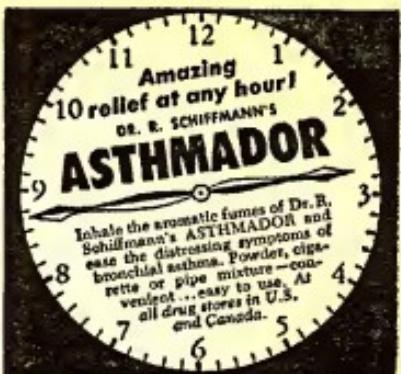
So small you could easily lose it down a crack in the floor but one of the very best fanzines currently around. The artwork, with D. Bruce Berry, Ruth Newbury, Miles Eaton and Editor Day contributing, is of fanzine superexcellence, as is printing, reproduction

[Turn page]

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FANTASY REVIEW (Vol. 2, Nos. 11 & 12), 115 Wanstead Park Road, Ilford, Essex, England. Editor, Walter Gillings. Published bi-monthly. 25¢ per copy, \$1.50 per year.

The earlier of these two issues is excellent as always, with much evidence of British fan and pro activity but the more recent is a stunner. It contains not only the Stapledon speech mentioned above, but an interview with E. H. Burroughs, a translation of a savage Soviet attack upon the "Fascist" underpinnings of American science fiction and a number of provocative lesser features. As we have already mentioned these British are going places.

FANTASY-TIMES, 101-02 Northern Boulevard, Corona, New York. Editor, James V. Tsurash. Published bi-weekly. 10¢ per copy, three issues 25¢.

So far and away the best of the current news-zines that there simply is no one else in the field. A must for fandom—hepfandom, that is.

MUTANT, 2551 King Street, Windsor, Ontario. Editor, S. Metchette. Published bi-monthly. 10¢ per copy, 3 issues 25¢.

Well, at last we can pour a little acid on this one after the above series of paens (Mexican peasants to you). The Official organ of the Michigan Science Fantasy Society is a bit on the dullish, to say nothing of the amazurish side this time out. Better pick up or down to B she goes.

OPERATION FANTAST, Riverside, South Brink, Wisbech, Cambridgeshire, England. Editors, Joyce and Kenneth F. Slater. Published bi-monthly. No price listed.

Lively if not-too-smooth, with much Christmas cheer in the issues here reviewed. Also one of the darnedest request ads (or rebuffs by Editors Slater) we have yet to see, case-hardened as we are to fanzine ambivalencies. Good fun.

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ROCKET NEWS LETTER, 5747 University Avenue, Chicago, Illinois. Editor, Vincent Story. Published monthly. 15¢ per copy, \$1.50 per year.

The organ of the Chicago Rocket Society continues to stand alone in its field with all sorts of stuff, including some very heavy matter, of interest to would-be space pilots. For others, no.

SCIENCE FANTASY AND SCIENCE FICTION,
P.O. Box #696, Kings Park, L.I., New York.
Editor, Franklin M. Dietz Jr. Published quarterly.
20¢ per copy, 65¢ per year.

Outstanding artwork in this semi-pocketized 'zine with Jay Aristrom and Jerry Bullock featured. Joe Kennedy had a riotous comic space fantasy entitled Hair Apparent to season an issue containing such names as Joe Schaumberger, "W. Leslie Hudson, Sam Miskowitz and Lin Carter." "The Official Organ of the Fantasy Artisans Club" is riding high in its third edition.

SCIENTIFANTASY, 1031 West 18th Street, Des Moines, Iowa. Editor, Bill Kroll. Published quarterly. 15¢ per copy, 50¢ per year.

Thanks to Co-editor John Grossman with an assist from Ralph Rayburn Phillips, fun artwork, of which we have recently been despairing, continues its remarkable renaissance in a watchpocket-sized "zine."

[Turn page]

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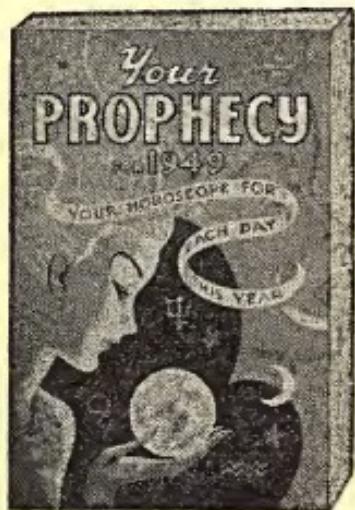
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SYDNEY FUTURIAN (Nos. 12-13-14), 180 Beach Street, Coogee, Sydney, N.S.W., Australia. Published monthly. 5¢ per copy, 6 issues for a current prozine.

This little magazine, neat, simple and newy, has stepped up recently from its bi-monthly pace to a monthly one and has doubled its pages as well. A good bet for any U.S. fan.

SPACEWARP (Vol. LV, Nos. 2 & 3), 2120 Bay Street, Saginaw, Michigan. Editor, Arthur H. Rapp. Published monthly. 15¢ per copy, 2 issues 25¢.

Despite ghastly artwork this fat fanzine rates the A-list with a well-balanced contents page that features a flock of fantamillars including Marion Zimmer, James, Conner, Rapp, Cox, Boggs, Harmon, Gregg and Watkins. Better get one of these new geniuses to take over the arteditorship, Arthur.

All in all a whale of a fine A-list. So let's down to the B's with our birds and get the distasteful business over space.

AMTORIAN (Vol. I, Nos. 1 & 2), P.O. Box #1563, Billings, Montana. Editor, Wallace Shore. Published monthly. No price listed. So far, kid stuff, chiefly preoccupied with E. R. Burroughs. May develop, however, as Shore seems enterprising.

BLOOMINGTON NEWS LETTER, P.O. Box #260, Bloomington, Illinois. Editor, Bob Tucker. Published

monthly. No price listed. Highly professional stuff—critiques, fantasy-publishing chatter and just plain Tuckeristic gags—neatly put out in a four-sheet that manages to look as if someone dear to Mr. Tucker had just passed on.

FLUB (Vol. 1, Nos. 1 & 2), P.O. Box #1563, Billings, Montana. Editor, Wallace Shore. Published monthly. No price listed. More Shore.

JABBERWOCKY, 88 Ardmore Road, West Hartford, Connecticut. Editor, Paul Spencer. Published irregularly. No price listed. A "Special David H. Keller" issue. Contains all about the Sage of Stroudsburg, Pa., also an irrelevant but pleasant little bink of fantastic imperialism by one Cynthia Carey. Not bad.

PEON (Nos. 4 & 5), 2116 Edzell Court, Alameda, California. Editor, Charles Lee Riddle, P.M. USN. Published monthly. Still good fanzina, despite its drop to the lower list—only trouble with these two issues is that the quality of the opposition took a large leap upward.

PERIHELION, Ridgeway, Illinois. Editor, George D. Mills. Published monthly. 5¢ per copy. 30¢ per year. A chatty little introductory neophyte featuring something new to English literature (not!)—the telescopic serial. Editor Mills, its author, has admittedly no idea how many installments he is going to run. It is entitled—**THE ATOM**.

A couple of Spectator Amateur Press Society magazines (**Sapzines**) stubbornly tried to work their way onto this list, but they deserve and shall receive, on the next trip, a rating all their own. All in all, guys and gals, a highly creditable showing, which makes up in quality what it lacks in quantity. Keep it up.

—THE EDITOR.

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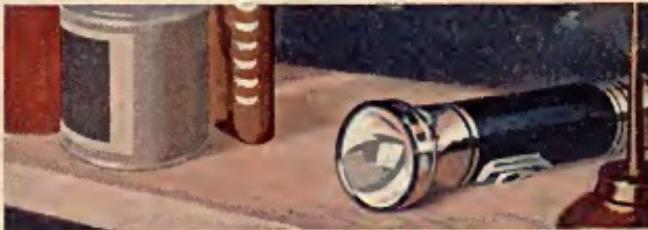
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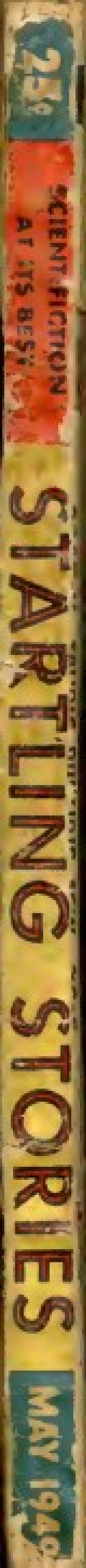
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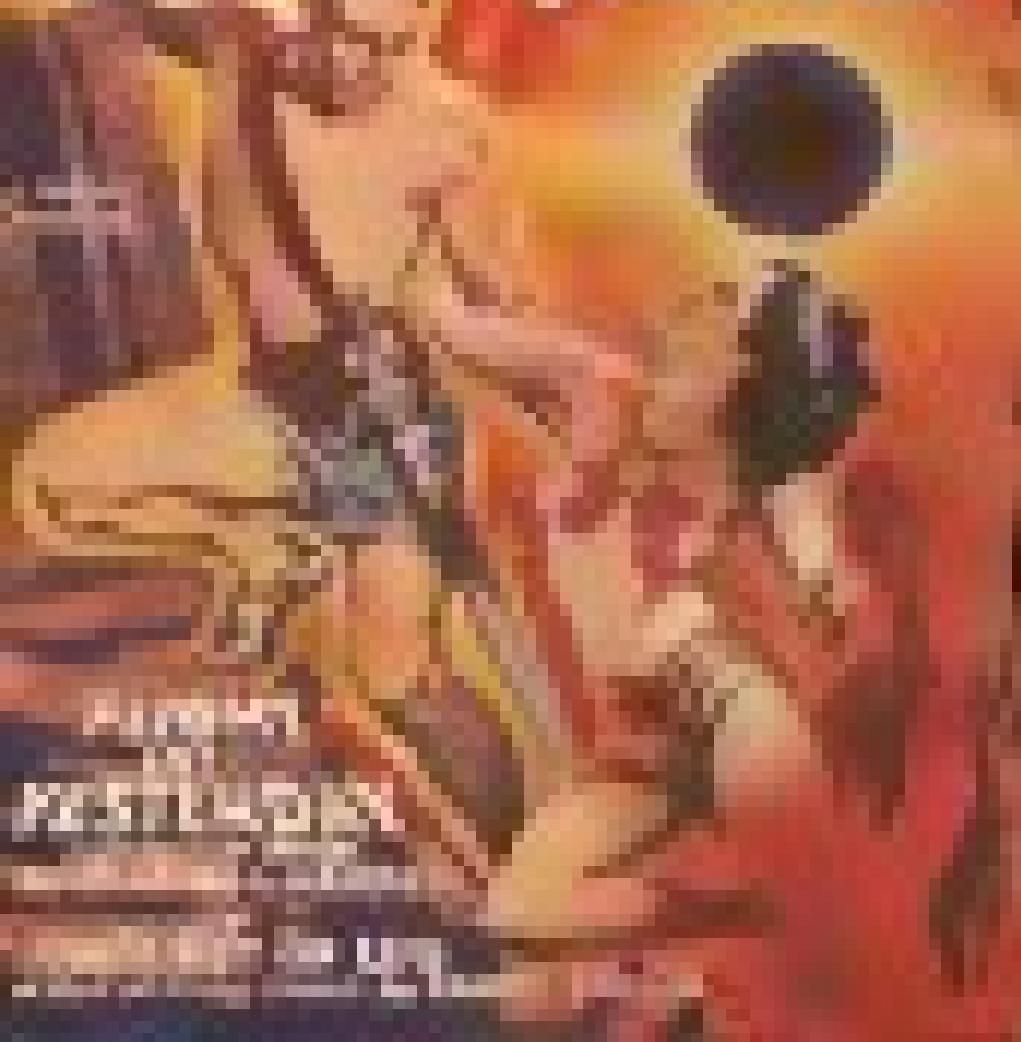
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